

Appendix 9

Waikanae North Design Guide



Concept Masterplan



Figure 1.
Waikanae North
Concept Masterplan

0 75 150 300 Meters

Legend

- Education designation
- Retirement accommodation area
- Land parcel boundaries

Figure 1: North Waikanae Concept Masterplan.

Note: All development within the North Waikanae development shall be in general accordance with the Concept Masterplan.

Masterplan

The Waikanae North Development Zone is divided into two areas which represent two distinct approaches to design: The Preserve and The Village.



Figure 2: North Waikanae Village and Preserve Plan

The Village is a medium density area consisting of a central core with living streets and squares and public green domain. The Preserve is an area of lower density development on dunelands and wetlands, helping to generate native hinterland.

The conceptual Masterplan for North Waikanae comprises of the following designed components:

1. Landscaped buffer zone
2. Landscaped parking courts and service areas
3. Mixed use commercial
4. The Market Building
5. Link Road through the Local Centre
6. Walk-up Apartment
7. Entrance from State Highway
8. Aquatic centre
9. Public piazza
10. Road link to coast
11. Waka House
12. Wetlands lake
13. Beach Figure 2: North Waikanae Village and Preserve Plan
14. Playground area

15. Lakefront domain and public boardwalks
16. Residential apartment developments
17. Row Houses
18. Lake front Row Houses
19. Pedestrian Bridge
20. Coastal link walkway
21. Link Road through Preserve
22. Parata Street Extension
23. Woonerf
24. Entrance to parking basements
25. 'Open space'
26. Dune development
27. Wetlands developments
28. Perimeter Road
29. Low density perimeter residential precinct
30. Neighbourhood park
31. Emergency vehicle access/pedestrian link
32. Medium density residential village precinct
33. Possible future mixed use/commercial area
34. Lookout point
35. Public island

Precinct Plan

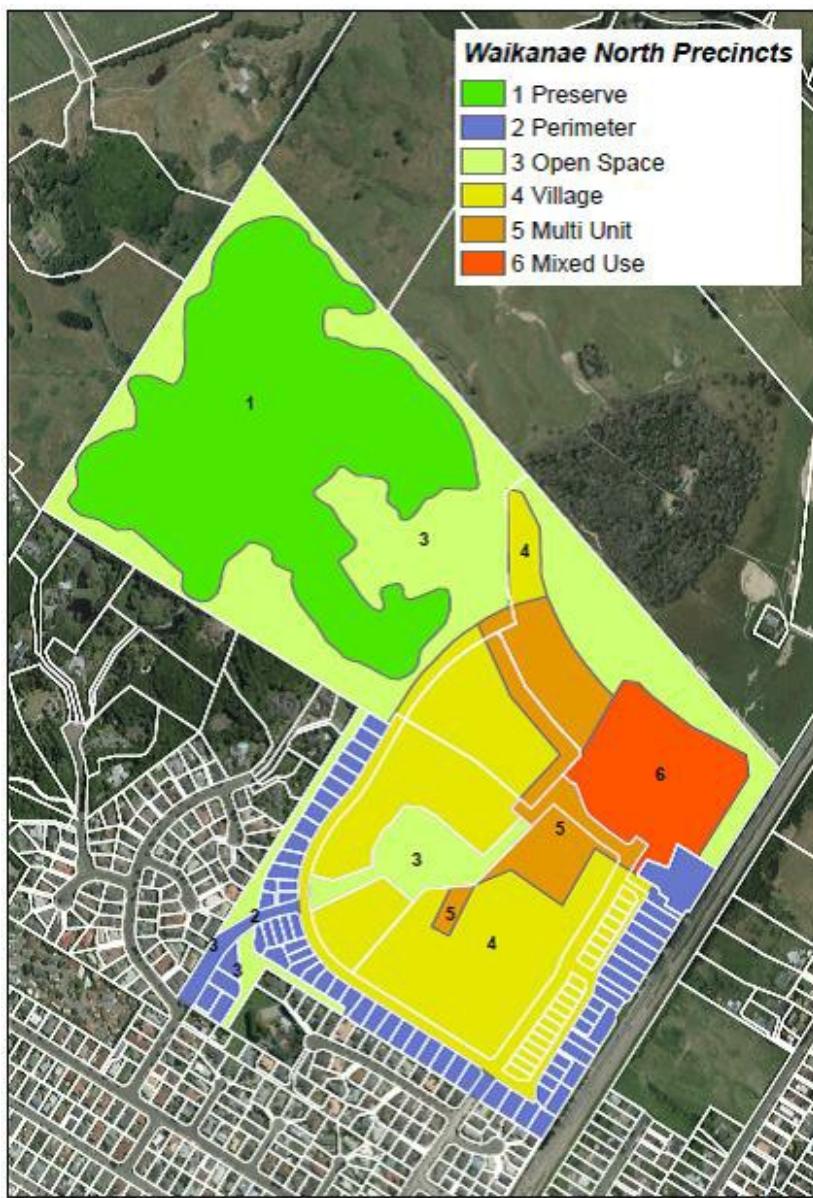


Figure 3: Precinct Plan

Regulatory Plan

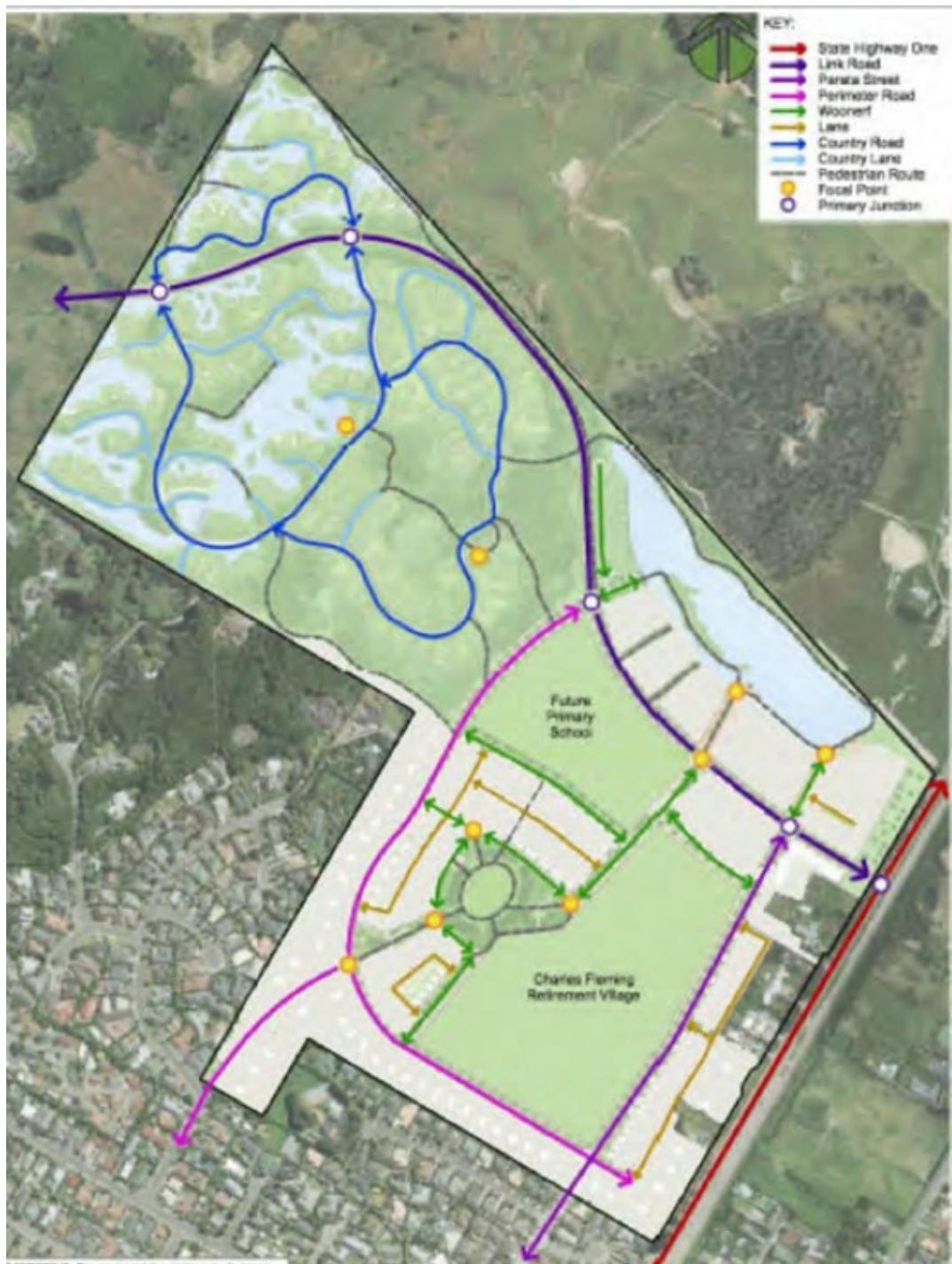


Figure 4: Regulatory Plan. Note: All development within the North Waikanae development shall be in general accordance with the Regulatory Plan.

Environmental Outcomes for Precinct 1

1.1 Introduction

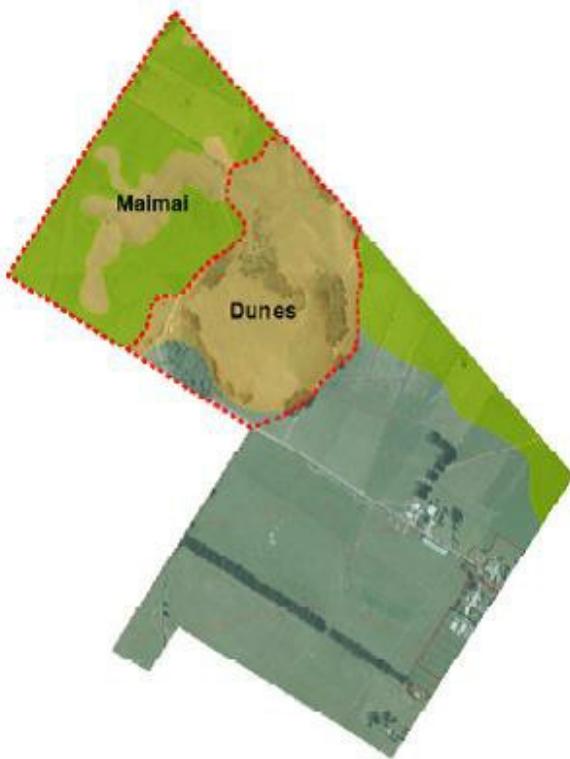
The development concept for Waikanae North is a response to landscape. The framework for that response is defined by the geological divisions of the site – namely, the gravels, dunes and peat areas.



Figure 5: Geological divisions found within the site

Contiguous with the existing settlement and suitable for more intensive urban development is the gravel area known as the Village, and the combined dune and peat areas are a more 'natural' zone and referred to as the Preserve.

Although the development response to the whole of the Preserve is of a low density and more natural character, the two landforms it contains have such different qualities that they are identified as two distinct responses that are called Dunes and Maimai (for the wetland edge).



1.2 Principles

A set of principles underpin the concept design for the Preserve. These principles directly generate the form of the proposed development.

1. It is the intention to retain all existing indigenous planting where possible and to rebuild biodiversity through a programme of planting and revegetation across the Preserve.
2. To rebuild the waterways in a comprehensive system of ponds, wetlands, streams, springs and drainage channels. This creates an active mechanism for the migration of fauna and flora throughout the area as well as providing the primary structure for the form of the development.
3. To deduce from this pattern of water and vegetation a movement network of roads, lanes, open space and pedestrian connections. This provides a secondary structure that when laid over the top of the natural systems largely determines the development capacity within the Preserve.

It is the intention to replant the whole of the Preserve; revegetation shall be by natural ecotype centred around the re-established waterways. The planting connects all of the remnant vegetation on the surrounding properties to create a large intact body of native bush with an ecological benefit far in excess of its value as separate entities, and it allows for the last major vegetative link to be made from the coastal plain to the forest on the Waikanae foothills.

The concept then places residential development within this environment. The development form in all its aspects (roads, services, buildings, outdoor living areas) follows nature rather than asserting itself on the environment.

1.3 Design Intentions

In combination with the Principles, a set of core goals can be framed as Design Intentions. These produce a development pattern that:

- Is responsive to landform and vegetation patterns
- Maintains continuity of plant cover and connectedness of ecosystems
- Maintains high levels of natural amenity and privacy for all allotments (minimising intrusion into open space areas)
- Generates clusters of buildings divided by larger areas of open space rather than an even distribution of allotments covering the whole area
- Creates variation in allotment and building size and type
- Creates a built environment which exhibits a seamless integration between the built and natural environments
- Avoids obvious and visually intrusive domestication in this zone through the creation of the Homesite/ Openland Concept



Figure 6: Artist impression of the low impact responses the Preserve merits.

1.4 Homesite/Openland Concept

Protection and enhancement of ecological values also carries through to the individual allotment level. The Homesite/ Openland Concept has been developed to secure the protection and enhancement of natural amenity values for residents in the wider landscape and between neighbouring allotments.

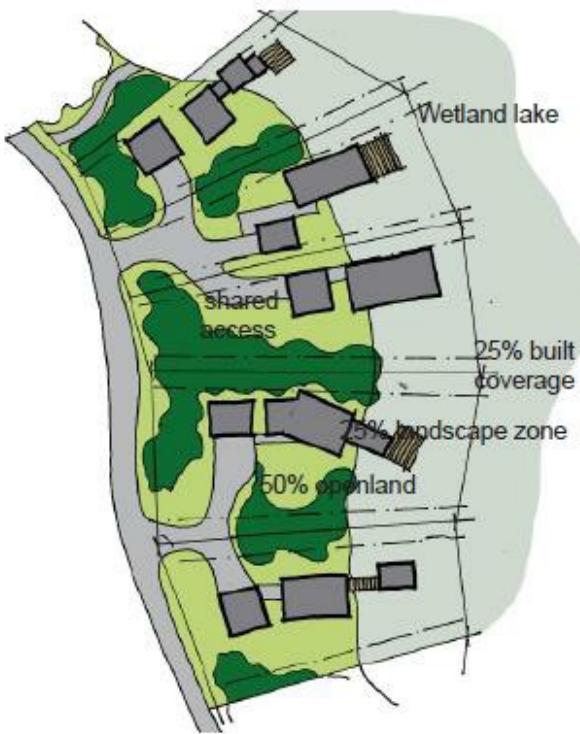
The Homesite is the area within the allotment that is able to be developed and modified. The intention of the rule is to provide enough land and flexibility in order to place a building, garage, driveway and outdoor living courts/decks but little else within a defined area. All built improvements, utilities and waste water disposal systems shall be located entirely within the Homesite.

Within each allotment a single area (with all boundaries forming a usable shape) is to be defined that is a maximum of 50% of the total allotment size or up to 400m² (whichever is smaller). This shall be designated as the Homesite and the remaining area is considered Openland.

The Openland is a minimum of 50% of any allotment that is required to be restored into native forest and/or wetland, and must include certain areas such as designated boundary strips (as detailed in the Preserve Precinct Codes).



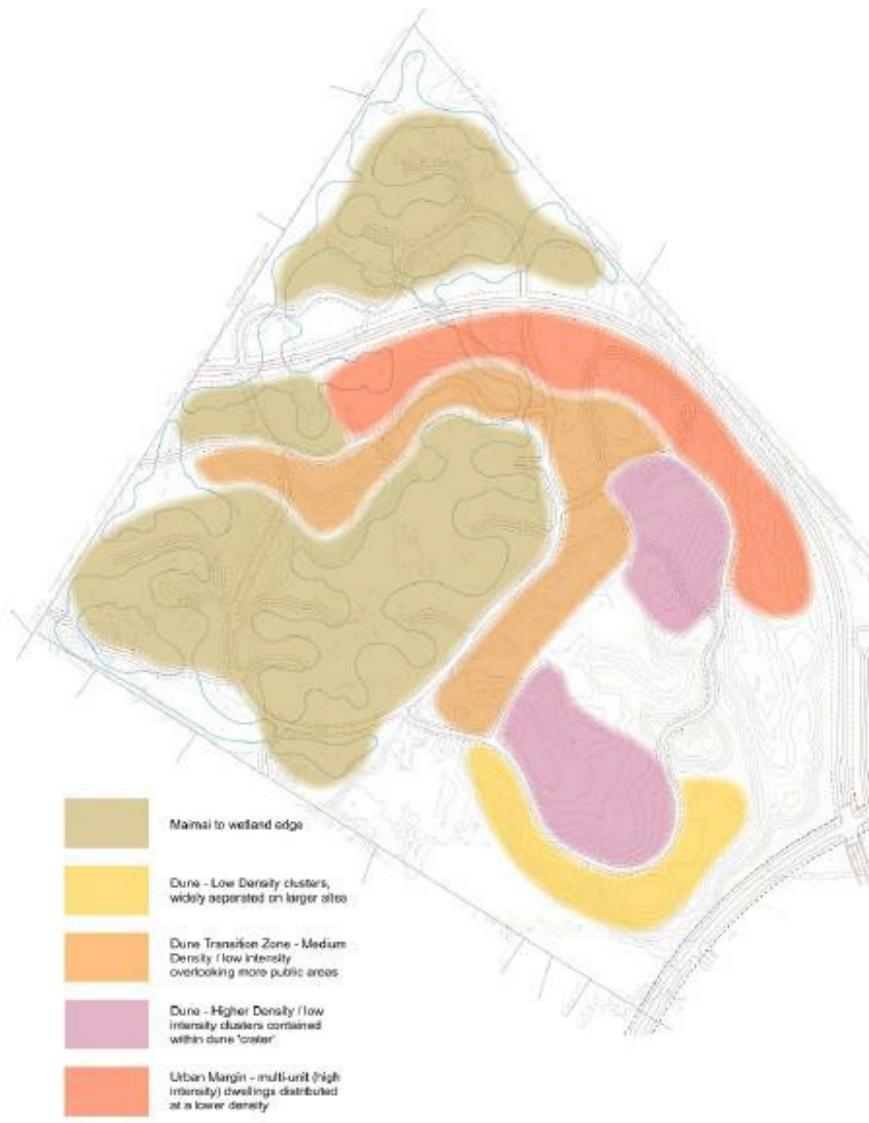
Figure 7: Sketch illustrating the ‘homesite / openland’ concept within the Preserve Dunes (above) and Mai mai’s (below)



1.5 The Development Plan Densities

The Development Areas Plan sets the primary pattern of density and intensity of development that will both help shape the landscape and protect it from inappropriate subdivision.

Density is the total number of allotments within a given area and is a function of amenity and the environmental carrying capacity of the site. Intensity, on the other hand, represents the distribution of that density. Where development is clustered it may result in a higher intensity of development (higher localised density) in certain areas but lower overall density.



Development Plan Densities

Figure 8: Development Areas Plan

Considerable reduction in environmental impact can be achieved by clustering buildings and access. In addition considerable benefit can then be derived from the creation of larger contiguous open space areas and corridors. In areas that have been identified for high intensity this allows for clustered development if undertaken by way of comprehensive development.

The primary division within the Preserve is between the Dunes and Maimai (low-lying peat) areas. Development variation is more naturally constrained by topography in the Maimai area, therefore all of this area has been classified as of the same type:

The Lower Density area (larger allotment, low intensity)

This largely defines the high outside face of the dunes where development is more likely to impact visually on the surrounding areas. Particularly for allotments higher and on the south face of dunes, amenity is maintained with larger allotment sizes and more room between neighbours.

The Dune Transition Area (medium density, low intensity)

This identifies areas that tend to overlook lanes and active areas, therefore a more conventional range of building density and intensity is appropriate.

The Higher Density Area (higher density, low intensity)

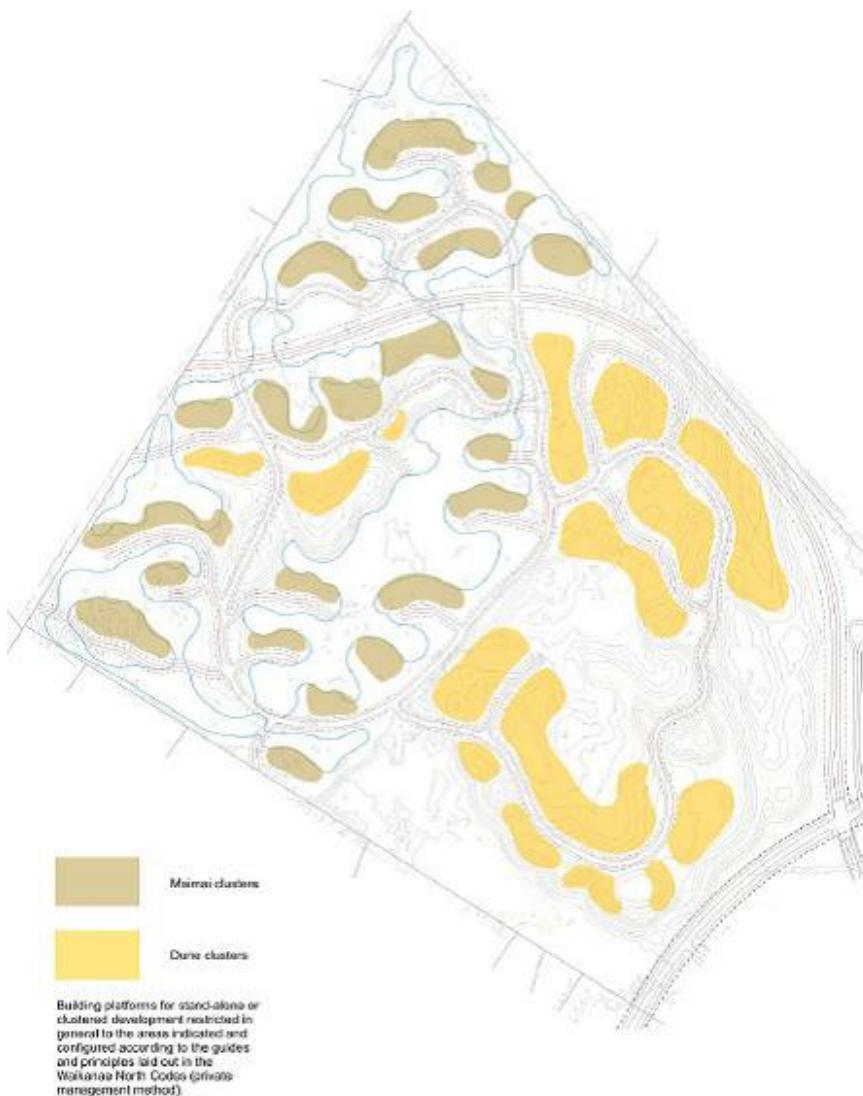
This is contained within the main dune structure. As environmental effects to the outside are therefore minimal, this area is capable of absorbing a higher density of development. The intention is that development in this area should be all single stand-alone houses (low intensity) to reduce the impact of large breaks in the canopy cover.

The Urban Margin Area (lower density, larger allotment, high intensity)

This zone recognises the relationship of the Preserve to the Village and the presence of the Link Road. The purpose of this Area is to introduce a building form to the Preserve that is a variation of those typologies that might be found in the Village. More urban than the very natural Maimai typologies, this development type buffers the intervention of the Link Road into the more natural Preserve environment.

1.6 The Net Developable Areas Plan

The Net Developable Areas Plan is more prescriptive in terms of what land can be built upon. It further refines range of development intensity mapped by the Development Areas Plan by pre-empting the decisions about the general siting and distribution of buildings, though not of allotment size and layout.



Net Developable Area Plan

Figure 9: Net Developable Area Plan

1.7 Conceptual Response Frameworks

Two levels of guidance are provided in order to ensure that any development responds to the environment in a way that supports and strengthens the values, aims and intentions of the overall development concept. These guides treat the Maimai and Dune areas separately. For each of these areas there are a set of General Design Goals. The Conceptual Response Framework demonstrates how development should respond to each topographical variation and then the Building Response Framework shows how individual buildings should fit to those variations. The Building Response Framework is dealt with in sections 5.3.12 and 5.3.13 of the Urban Design Codes (private management method).



Figure 10: Artist impression of wetland

1.7.1 Maimai Conceptual Response

New (constructed) landscape should extend out into the wetland on an east/west axis from the existing dune structures in a natural way. This creates areas of open north-facing shoreline for development with buildings and driveways screened from any development to the south by dune mounding and native planting.

The ends of these new dune extensions are to remain free of development so that they can be planted. This will help maintain the continuity of the bush view along the length of the ponds from the opposite shore.

The wetland and pond area in front of the houses can contain islands of vegetation to add complexity and visual interest to the immediate environment, as well as providing extra intermediate screening where required.

The new shoreline should move in and out to create a more complex topography to contain a variety of development forms.

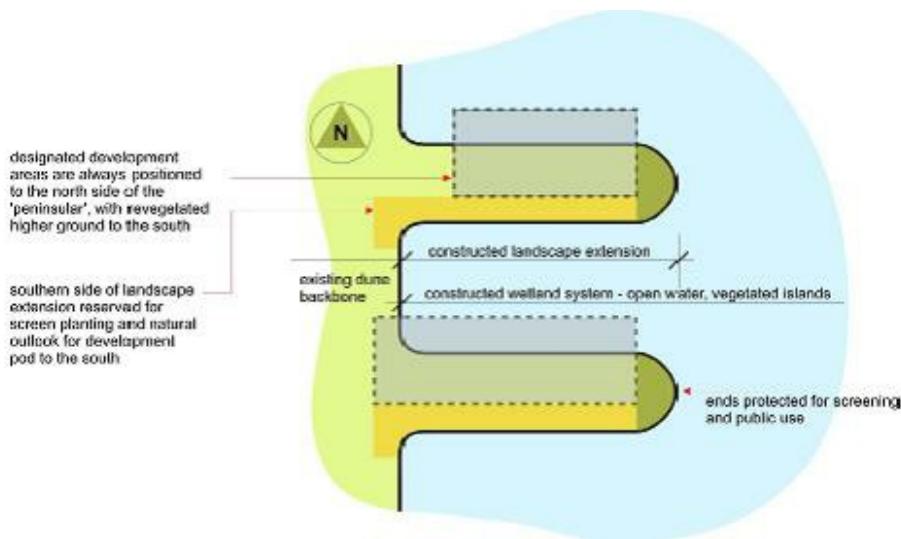


Figure 11: Maimai conceptual response

1.1.2 Dune Conceptual Response

It is the intention to completely revegetate the main dune with coastal broadleaf forest. A small number of houses generally arranged in multiple (outward facing clusters of 2-4 units) to minimise driveway interventions will be sited down from the ridges so that their living areas emerge from and are part of the tree canopy.

Building sites should generally be distributed along the roads.

Buildings should be placed where living areas (decks) can attain some elevation among the opened canopy to the north.

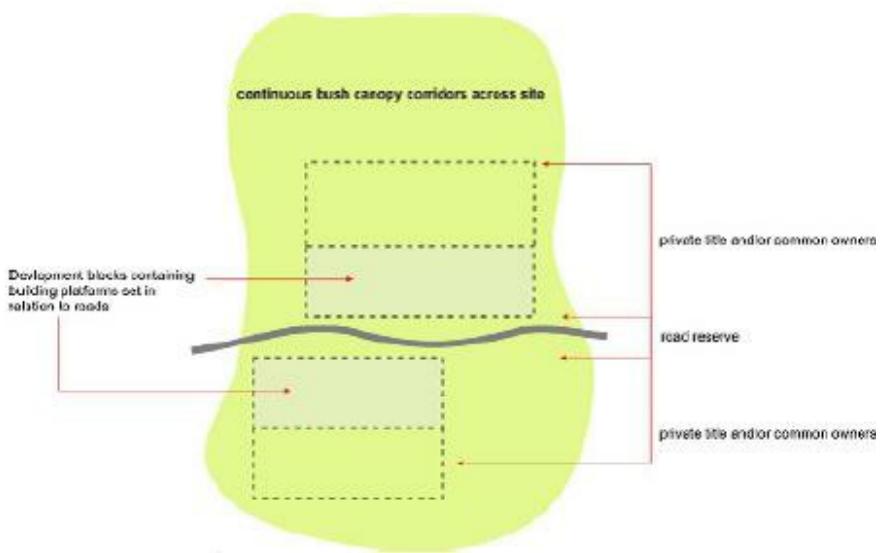


Figure 12: Dunes conceptual response

Movement Codes

Note: All development within North Waikanae shall be in general accordance with the Design Codes for roads as defined in this Section. These codes apply to both the Preserve and the Village.

1.5 Introduction

These Movement Codes deal with the character and appearance of streets and other public spaces in residential and mixed use areas. These codes are determined by the fundamental structure and spatial qualities of the street system and are influenced by the siting and design of buildings, surface textures, planting and other landscape elements.

In addition to codes for on-street parking and recreational movement networks, the movement network within North Waikanae is divided into the following street typologies for which the codes follow:

- Link Road (Village)
- Link Road (Preserve)
- Parata Street
- Perimeter Street
- Woonerfs
- Lanes
- Country Streets
- Country Lanes



Figure 13: Guides in this section aim at ensuring the production of coherent, safe and enjoyable movement spaces within the development

2.2 General street codes

2.2.1 Design

- Avoid repetitive streets over flat site
- Streets should reflect their function and character in the way they are designed, their size and road surfaces materials
- Streets should be terminated where necessary with vistas or visual foci in the form of views, buildings or enclosure/landscape areas
- Streets should provide appropriate street lengths, bends and turning radii to allow for optimum traffic speeds
- Streets should be designed to accommodate public utility services and drainage systems
- Streets should integrate access for pedestrians and cyclists into the main street networks

2.2.2 Connections

- Street systems should be connected to surrounding networks to encourage a flow of pedestrian movement
- Street design should discourage cul de sacs and disjointed separated roads, and endeavour to

connect streets into a coherent system

- There should be good, legible and efficient route choice for vehicles in all areas.

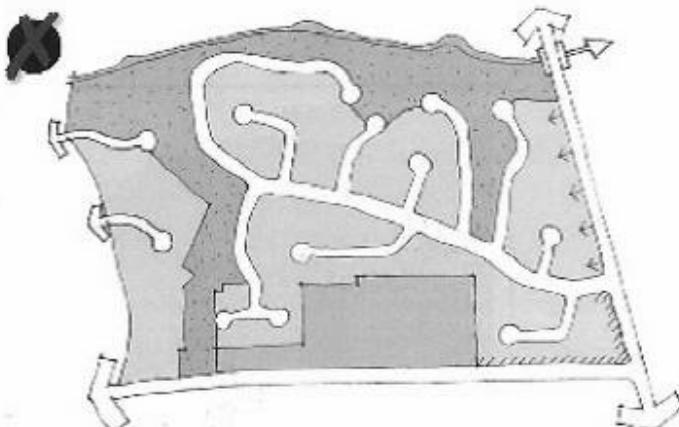


Figure 14: Streets which end in cul de sacs do not promote connection through to other areas

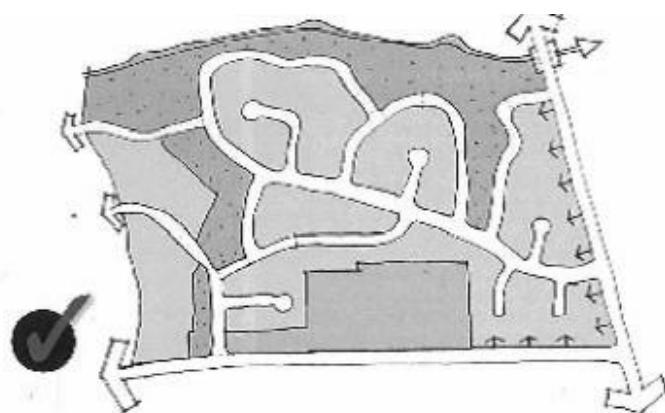


Figure 15: Connection of streets into surrounding networks encourages easier traffic and pedestrian flows

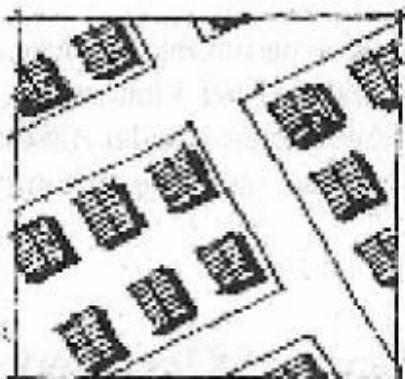


Figure 16: Repetitive street design creates a monotonous design

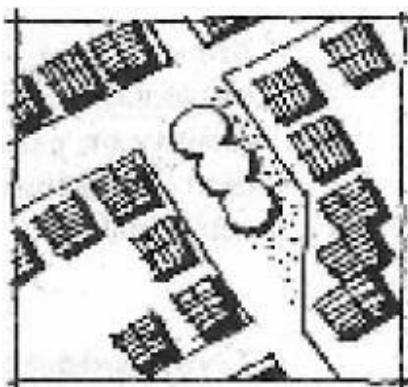


Figure 17: A varied street design helps promote character

2.2.3 Traffic

- Streets should be designed to encourage speed reduction with use of planting, street furniture, narrow carriageways and changes in direction
- Unintended thoroughfare traffic in neighbourhoods should be discouraged by making neighbourhood roads less direct and main routes more easily accessible
- Radii at intersections should be kept to a minimum to help reduce traffic speed and facilitate pedestrian movement

Material Choice

- Road surface materials shall be applied relative to the continuum of vehicle / pedestrian
- For example asphalt / chip seal / concrete / pavers / gravel

2.3 On street Parking codes

- In principle, parking should provide sufficient and convenient parking for residents, visitors and service vehicles
- Parked vehicles should not obstruct the passage of vehicles on any streets or create traffic hazards
- Parking facilities on streets should not detract from the amenity and surveillance of the street
- Parking on streets should not compromise pedestrian and cyclist movement routes
- Refer to the Building and Lot Design Guidelines for onsite parking requirements

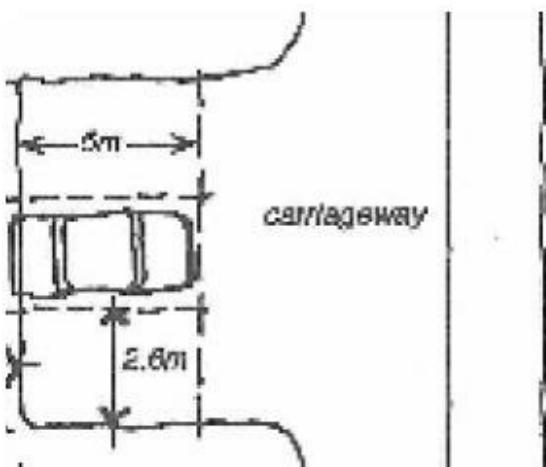


Figure 18: On street parking should allow for sufficient turning area which does not conflict with traffic

2.4 Recreational Movement codes

Design

- Designs should allow easy pedestrian access to services, shops and public places of interest
- Recreational movement networks should allow for walkable and safe neighbourhoods
- They should be designed as legible systems well linked into adjacent similar networks
- They should be designed to facilitate movement of disabled, aged and young pedestrians
- They should take into account sun orientation, use patterns, shade and pedestrian amenity
- Pedestrian routes should be constructed of durable non skid surfaces and be of sufficient width and strength to cater for use types and volumes
- Paths should widen at meeting points and junctions on high use areas to allow for passing of pedestrians/cyclists

Connections

- They should be incorporated into street networks as coherent movement systems
- Recreational movement networks may be integrated into the street surface area in woonerfs, preserve roads and lanes
- Recreational movement networks should not be integrated into the street surface area in any other streets which have higher traffic loads



Figure 19: A pedestrian system incorporated with landscaping, parking and vehicular streets

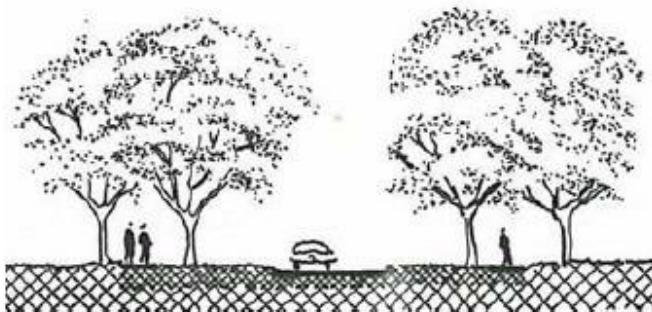


Figure 20: A pedestrian system separated from a vehicular route creates safety on roads with higher traffic

Use

- Good cycling conditions in movement reserves should include: bicycle parking facilities, slower vehicle speeds, wide kerb side lanes on busier streets and routes which are parallel to arterial roads
- Along busier recreational movement networks, cycling, pedestrian and bridle paths should be clearly separated with sufficient width
- Along quieter recreational movement networks, cycling and bridle paths may be provided in dual width paths with sufficient width



Figure 21: Dual use paths should allow enough width for passing and stopping areas

Material Choice

- Recreational Movement Network surface materials shall be applied relative to the continuum of urban / natural
- For example pavers / styled concrete / compacted aggregate / timber boardwalks

2.5 Village Street Planting

- Streets should facilitate infiltration of stormwater run-off wherever practical
- New planting in street and recreational reserves must protect important viewsheds and help to define

- use areas along the route
- An overall landscape management plan will be prepared for each street typology by the Requester
- Landscaping should be designed to minimise maintenance costs
- Plant materials in landscaped zones are to be grouped according to their water consumption needs
- Street planting should not obscure visibility to pedestrians or motorists
- Existing trees and vegetation within road reserves should be retained and utilised where they can make a positive contribution to the visual character of the street

2.6 Preserve Street Planting

- The landscaping in street reserves is intended to contain the road and provide a road level visual screen to the residential allotments
- This planting shall be entirely in accordance with the structure of the relevant plant association
- Wherever practicable, stormwater shall be controlled by grassed or planted swales and permeable gravelled parking/passing bays

Specific Road Design Codes

The urban sections of the Link Road are divided into three discrete sections. The first is the area set aside for the entry and potential grade separated interchange, this is not dealt with in these codes and will be designed in conjunction with the New Zealand Transport Agency. The second is the Neighbourhood Main Street through the local centre of Waikanae North. The third and final section is the Urban Boulevard which is located in the remainder of the urban sections of the Link Road.

3.1 Link Road Codes — Neighbourhood Main Street

CHARACTERISTIC	REASON AND COMMENT
ROAD CHARACTER	This is an arterial route with a 50km design speed. It appears more formalised within the local centre with an emphasis on legible, generously spaced and comfortable pedestrian areas.
RESERVE WIDTH	21-23.0m
CARRIAGEWAY	2x separate lanes of 3.5m each.
PARKING	No formal parking provided in road reserve.
KERBING	Formal kerbing between landscape and cycleway/footpath.
FOOTPATH	5.m width. Routes/access to both sides of these streets.
CYCLE PATH	Integrated into carriageway. Distinguished through different surface material

BRIDLE PATH	N/A
DRIVEWAY ACCESS	No private residential driveways off Link Road. Only driveway access into public parking areas and residential lanes.
LANDSCAPE APPROACH	Use of large specimen tree planting to define carriageways and to scale buildings to the road.
MEDIAN STRIP	Grassed and paved for pedestrian and safe-zone crossing. Paved sections should be flush with road surface.
STORMWATER	Stormwater to gutters at kerbs.



Figure 22: Link Road (Neighbourhood Main Street) cross section and indicative plan

3.2 Link Road Codes — Urban Boulevard

CHARACTERISTIC	REASON AND COMMENT
ROAD CHARACTER	This is a more boulevard style of road, traffic calmed with pedestrian crossings signalised.
RESERVE WIDTH	23.0m
CARRIAGEWAY	2x separate lanes of 3.5m each.

PARKING	No formal parking provided on street.
KERBING	Formal kerbing between landscape and cycleway/footpath.
FOOTPATH	2.5m width. Routes/access to both sides of these streets.
CYCLE PATH	Integrated into carriageway. Distinguished through different surface material
BRIDLE PATH	N/A
DRIVEWAY ACCESS	No private residential driveways off Link Road. Only driveway access into public parking areas and residential lanes.
LANDSCAPE APPROACH	Use of large specimen tree planting to define carriageways and to scale buildings to the road.
MEDIAN STRIP	Grassed and paved for pedestrian and safe-zone crossing. Paved sections should be flush with road surface.
STORMWATER	Stormwater to gutters at kerbs and swale / rain garden in the centre.



Figure 23: Link Road (Urban Boulevard) cross section and indicative plan

3.3 Link Road Codes — Preserve

CHARACTERISTIC	REASON AND COMMENT
ROAD CHARACTER	There is a high quality road with rural qualities, emphasising movement through a landscape. It has a 50km design speed. There is minimum visual connection to residential development. Recreational and vehicular networks are separate to add visual and safety amenity to pedestrians and cyclists.
RESERVE WIDTH	18-20m

CARRIAGeway	7m width.
PARKING	No formal parking beside carriageways.
KERBING	Flush kerb to edge of carriageway.
FOOTPATH	2.5m- 3.0m width meandering footpath to both sides of the street.
CYCLE PATH	Integrated into carriageway. Distinguished through different surface material.
BRIDLE PATH	Integrated into footpath. Where applicable, width to be sufficient for pedestrian and horse passing.
DRIVEWAY ACCESS	No private residential driveways off Link Road. Only driveway access into public parking areas and Preserve Country lanes.
LANDSCAPE APPROACH	Landscape used to separate carriageway from recreational movement network.
MEDIAN STRIP	None.
STORMWATER	Stormwater to swales and rain gardens at edge of carriageway.

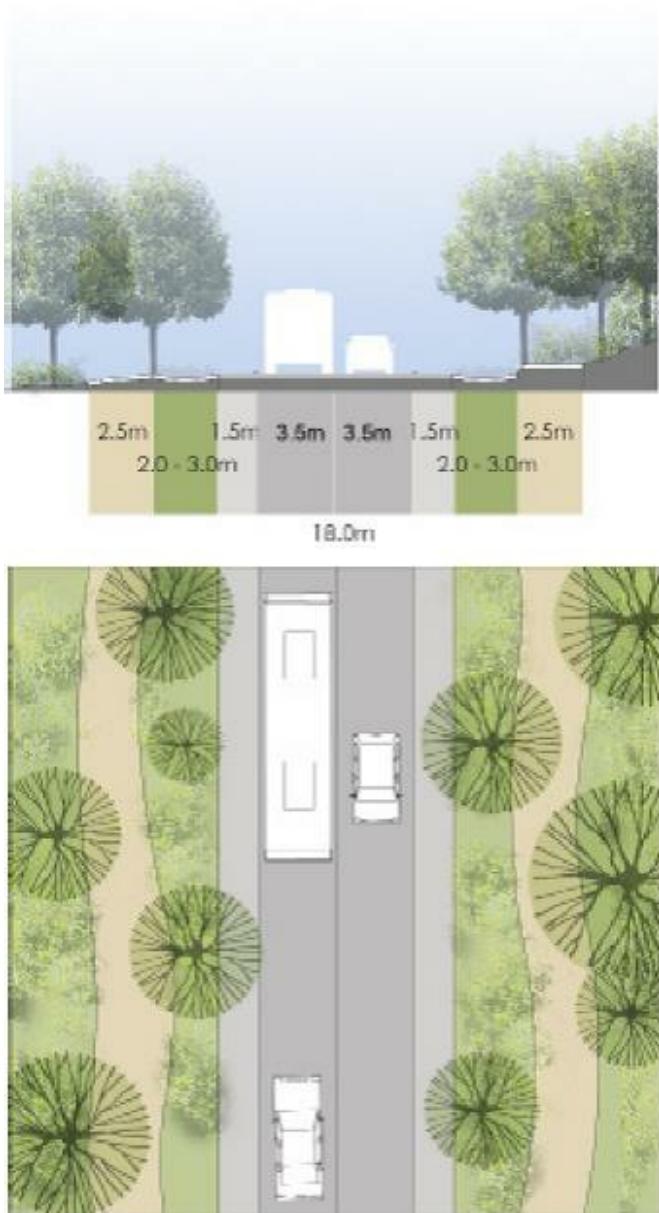


Figure 24: Western Link Road (Preserve) cross section and indicative plan

3.4 Parata Street Codes

CHARACTERISTIC	REASON AND COMMENT
ROAD CHARACTER	This is a primary movement route extending from the existing Parata Street from Waikanae Town Centre. It is functional in scale, yet is broken down through landscaping and a central median strip.
RESERVE WIDTH	20-21.0m

CARRIAGEWAY	2x lanes of 3.5m each.
PARKING	Intermittent parallel parking beside carriageways. Parking integrated with landscape provision for trees, swales and landscaping.
KERBING	Roll-over kerb between parking lane and footpath.
FOOTPATH	3mwide footpath to both sides of the carriageway.
CYCLE PATH	Integrated into footpath. Distinguished through different surface material.
BRIDLE PATH	None
DRIVEWAY ACCESS	No private residential driveways off Parata Street — all residential houses/developments have vehicular access off lanes.
LANDSCAPE APPROACH	Use of large specimen tree planting to define carriageways with natural median to separate opposing traffic.
MEDIAN STRIP	2-4m wide rain garden and native planting.
STORMWATER	Stormwater to central swales and rain gardens.

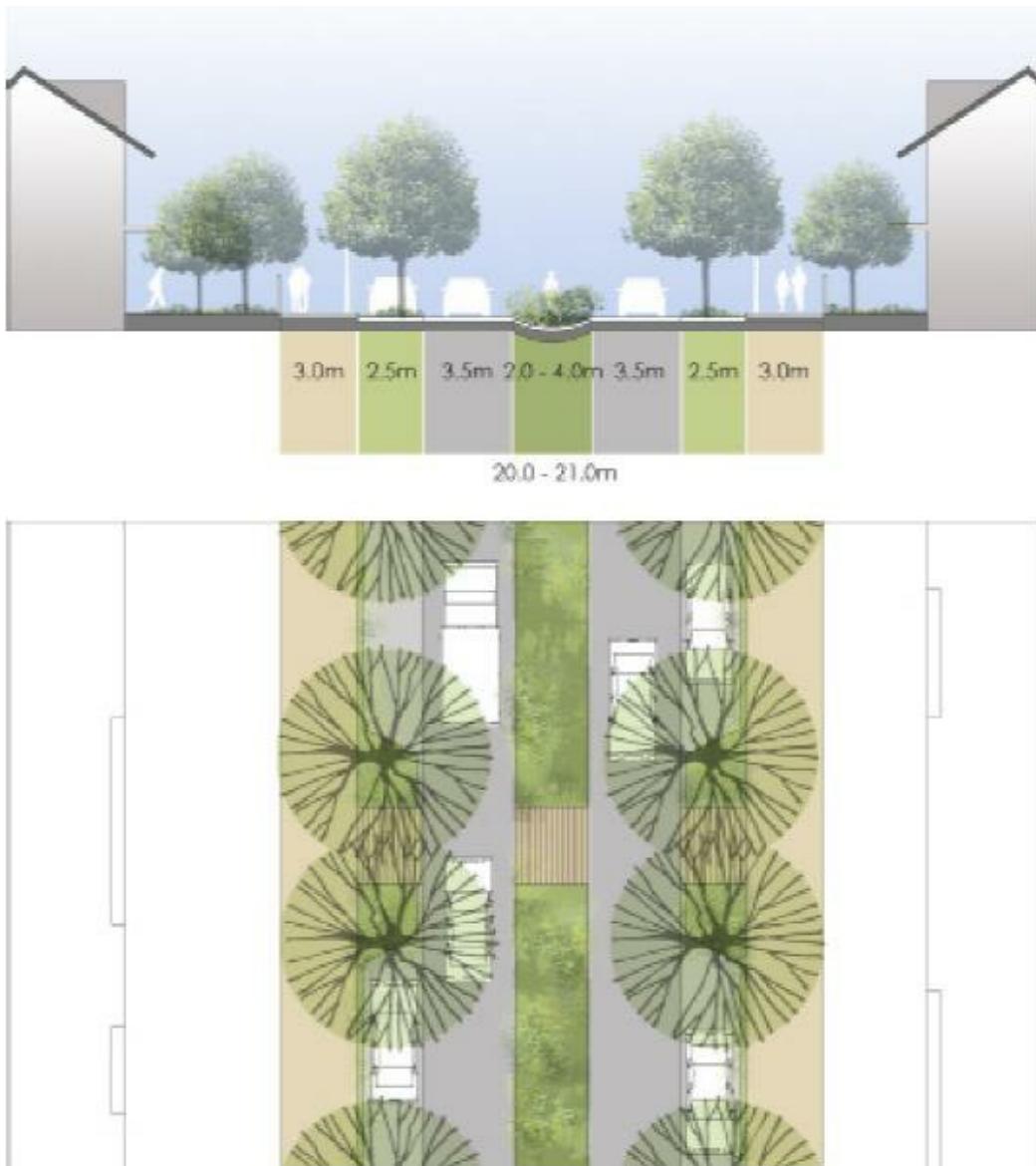


Figure 25: Parata Street cross section and indicative plan

3.5 Perimeter Street Codes

CHARACTERISTIC	REASON AND COMMENT
ROAD CHARACTER	The Perimeter Street is envisaged as a heavily treed and landscaped reserve where pedestrian activity, horse riding and cycling is encouraged. It has a 30km design speed.
RESERVE WIDTH	16-18m
CARRIAGEWAY	5.5m width. This discourages fast traffic.

PARKING	Intermittent parallel parking beside carriageways. Parking integrated with landscape provision for trees, swales and landscaping.
KERBING	Flush kerbs to edge of carriageway
FOOTPATH	Varying widths. Average 2.0m. Meandering footpath to both sides of the street.
CYCLE PATH	Integrated into footpath. Distinguished through different surface material.
BRIDLE PATH	Separated from footpath. This takes place in the 0-5.0m verge reserve.
DRIVEWAY ACCESS	For country estate houses. Accessed either individually or in shared access directly off the Perimeter Street.
LANDSCAPE APPROACH	Landscape used to separate recreational movement network from carriageway and property boundaries.
MEDIAN STRIP	None
STORMWATER	Stormwater to central swales and rain gardens in parking/landscape strip.

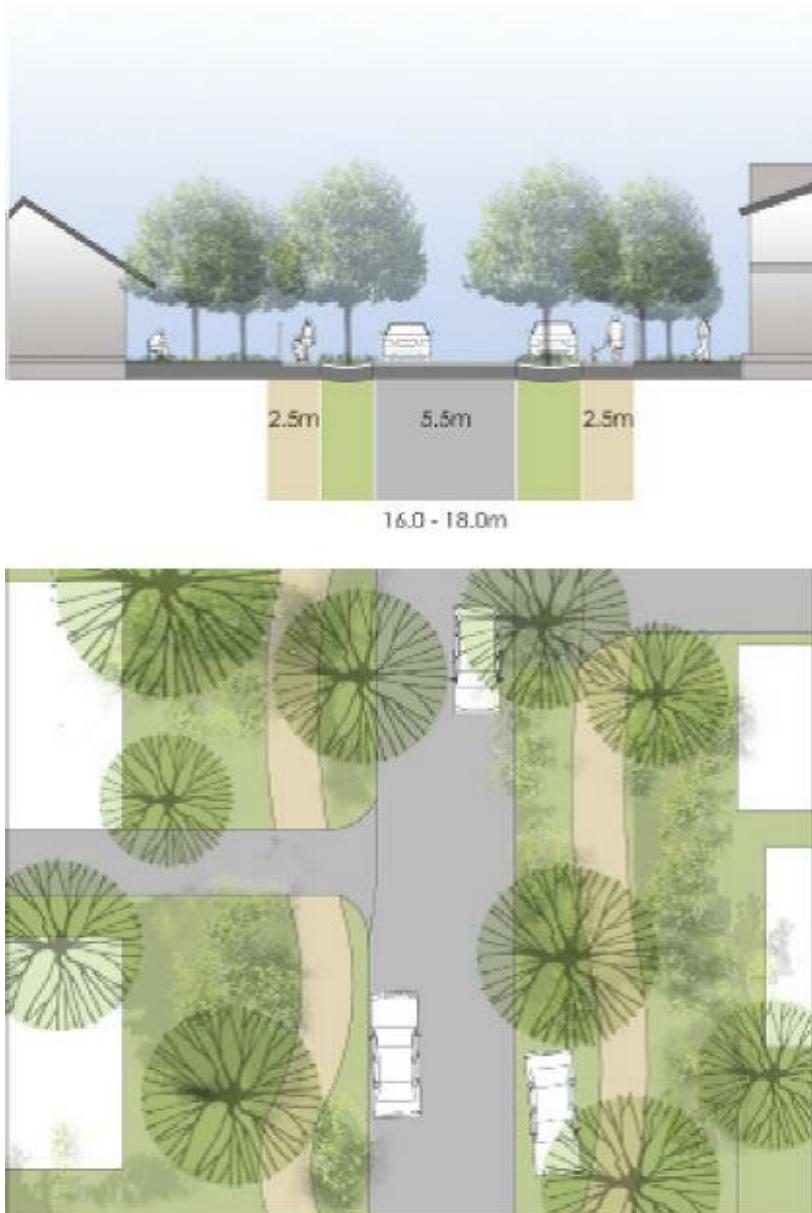


Figure 26: Perimeter Street cross section and indicative plan

3.6 Woonerf Codes

CHARACTERISTIC	REASON AND COMMENT
ROAD CHARACTER	Woonerfs are designed to create a more integrated neighbourhood living space as opposed to a vehicular street, while encouraging slower vehicular traffic, small pocket parks, parking areas and play areas.
RESERVE WIDTH	18-20m

CARRIAGeway	Varying width 3.5-5m to allow for passing bays at intervals. Woonerf access is to be continuous from one entry to another exit; and should not terminate in parking or a turn-around circle. Variable materials should be used to define transit, parking and pedestrian hierarchy and to give the appearance of private accessways rather than typical streets. Streets should provide appropriate street lengths, bends and turning radii to allow for optimum traffic speeds.
PARKING	Parallel bays or right angled / diagonal parking in pockets at entries.
KERBING	Flush kerbs to landscape areas.
FOOTPATH	2m width. To be provided to both sides of the carriageway. Concrete pavers/variable width to include informal courts. Meandering footpath to both sides of the street. These may be incorporated into the carriageway reserve, as long as such an area is defined by raising the footpath/court level, providing bollards to define space and by using different surface materials. Street furniture should be included at points besides pedestrian routes.
CYCLE PATH	None. Cycling provision is on the carriageway.
BRIDLE PATH	None.
DRIVEWAY ACCESS	No private residential driveways occur off woonerfs, as this takes place from rear lanes.
LANDSCAPE APPROACH	Mix of open paved, permeable, grassed planted areas, seating and play areas.
MEDIAN STRIP	None.
STORMWATER	Stormwater to swales, rain gardens and permeable landscape surfaces.



Figure 27: Woonerf cross section and indicative plan

3.7 Access Lane Codes

CHARACTERISTIC	REASON AND COMMENT
ROAD CHARACTER	These access lanes occur mid-block and are used for vehicular access to garages of residential properties. There is an opportunity to create active overlooking of the lane through residential development above garages.
RESERVE WIDTH	6m. this allows for 2 cars to pass comfortably. In addition, a 2m

	setback is required for any garages or car parks to allow easy reverse manoeuvring. This 2m setback may also provide parallel parking bays for private use beside the road reserve.
CARRIAGEWAY	6m width. Lane to have permeable surface materials. Lane access is to be continuous from one entry to another exit; and should not terminate in parking or a turn-around circle. Variable materials should be used to give the appearance of private accessways rather than typical streets. Lanes should provide appropriate lengths, bends and turning radii to control traffic speeds. They should allow sufficient turning circles for vehicles entering garages and parking areas, as well as for any service vehicles and trucks to turn any corners.
PARKING	No on-street parking.
KERBING	No kerbing.
FOOTPATH	Pedestrian access incorporated into the carriageway reserve.
CYCLE PATH	None. Cycling provision is on the carriageway.
BRIDLE PATH	None.
DRIVEWAY ACCESS	Parking and garages / carparks are accessed directly from lanes.
LANDSCAPE APPROACH	Mix of open and permeable surfaces.
MEDIAN STRIP	None.
STORMWATER	Infiltration through use of permeable surface materials on lane as well as Dish Drains to either side of carriageway or the centre..

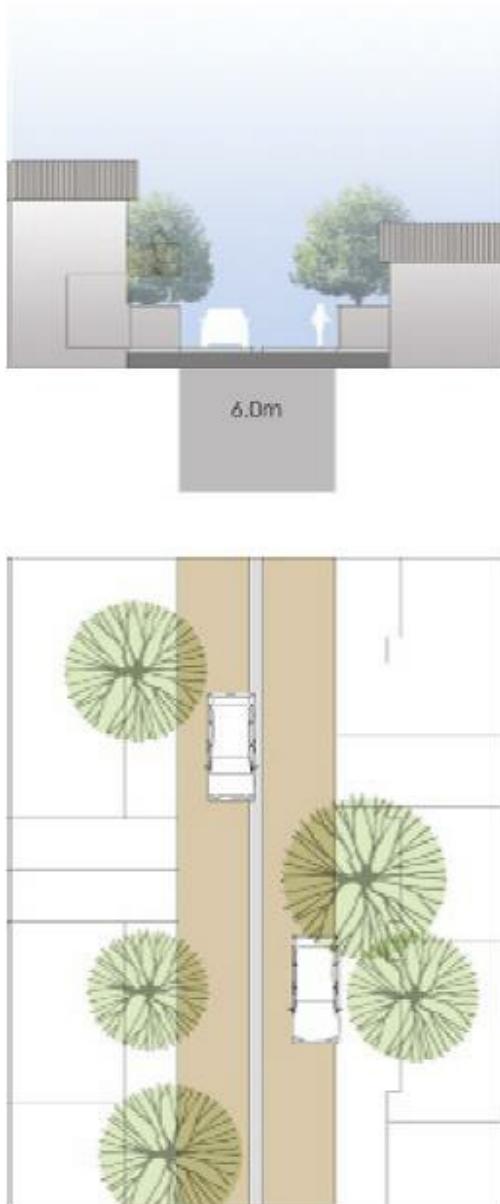


Figure 28: Lane cross section and indicative plan

3.8 Preserve Country Road Codes

CHARACTERISTIC	REASON AND COMMENT
ROAD CHARACTER	Preserve Country Roads connect to the Western Link Road and form the main access routes to Maimais and Dune House within the reserve. They have a 30km design speed.
RESERVE WIDTH	10-12m.

CARRIAGeway	5.5m width.
PARKING	Diagonal/parallel/right angle parking in pockets beside the carriageway, integrated with landscaping verges.
KERBING	Flush kerbs to carriageway.
FOOTPATH	No dedicated footpath within the reserve. Pedestrians to use the grassed / landscaped 3.0m reserve on either of carriageway, or recreational movement activity can be incorporated into the vehicular route.
CYCLE PATH	None. Cycling provision is on the carriageway.
BRIDLE PATH	None.
DRIVEWAY ACCESS	Residential driveways (either private or shared) are accessed directly from the roadway.
LANDSCAPE APPROACH	Landscape contains carriageway and underplanting provides visual screening to residential allotments.
MEDIAN STRIP	None.
STORMWATER	Stormwater to swales, rain gardens and permeable landscape surfaces.

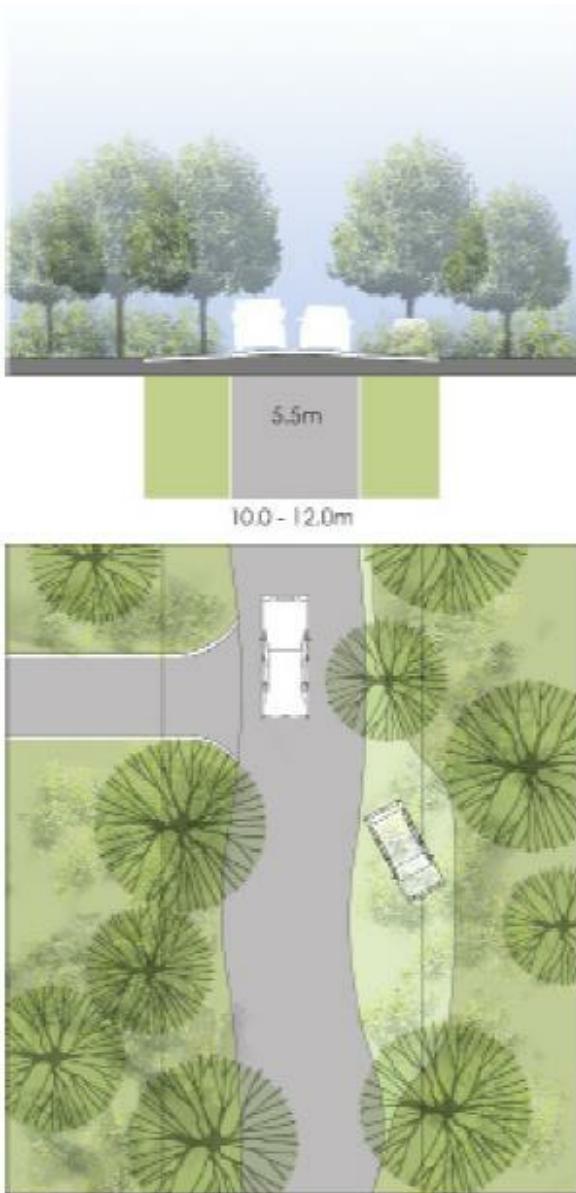


Figure 29: Country road cross section and indicative plan

3.9 Preserve Country Lane Codes

CHARACTERISTIC	REASON AND COMMENT
ROAD CHARACTER	Preserve Country Lanes are narrower than country roads and are designed to reduce traffic speeds and minimise noise and visual impact within the reserve.
RESERVE WIDTH	10-12m.
CARRIAGeway	3.5m width with gravel passing lanes.

PARKING	Parallel parking takes place informally in pockets beside the carriageway, integrated with landscaping verges.
KERBING	Flush kerbs to carriageway.
FOOTPATH	No dedicated footpath within the reserve. Pedestrians to use the grassed / landscaped 5.0m reserve on either of carriageway, or recreational movement activity can be incorporated into the vehicular route.
CYCLE PATH	None. Cycling provision is on the carriageway.
BRIDLE PATH	None.
DRIVEWAY ACCESS	Residential driveways (either private or shared) are accessed directly from the roadway.
LANDSCAPE APPROACH	Landscape contains carriageway and provides visual screening to residential allotments.
MEDIAN STRIP	None.
STORMWATER	Stormwater to swales, rain gardens and permeable landscape surfaces.

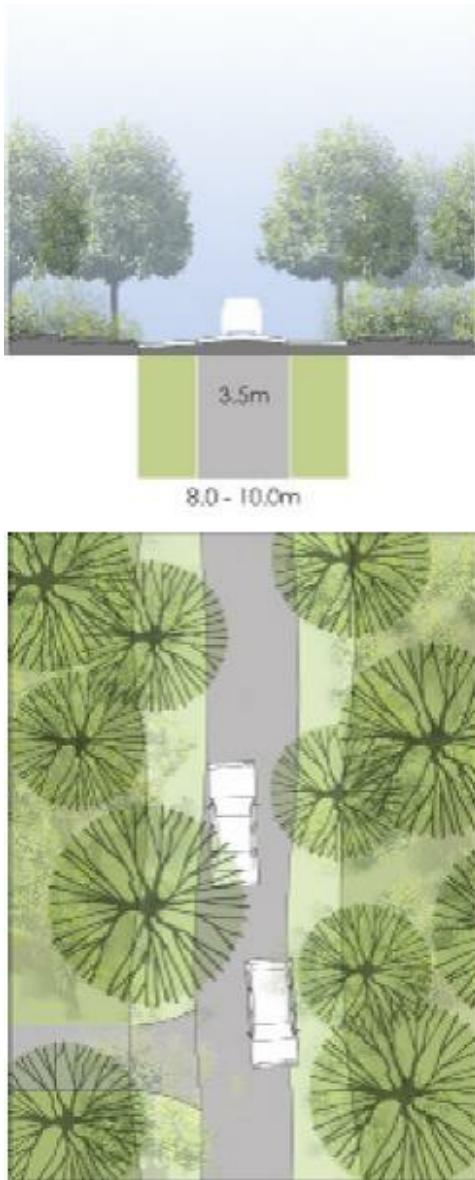


Figure 30: Country lane cross section and indicative plan

Building Design Guides

4.1 Detached Villas Codes

Located within the Village Precinct (Precinct 4), the larger stand-alone cottages enjoy both the atmosphere of the village and the arcadian landscape of the adjacent Perimeter Precinct.

The more generous street frontage and side yard requirements provide for a greater variation in building form. These have the effect of encouraging 2-3 storey family dwellings, close to the street, with private back yards and garages access from a rear lane. This height encourages the use of loft spaces for living.

A garden wall, up to 1.8m in height, should be required along unbuilt common side boundary.

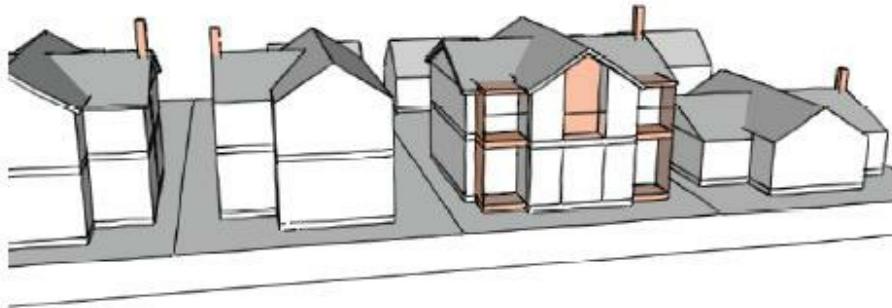


Figure 31: Typical Allotment Layout of a Detached Villa (indicative only — Layout and size may change)

Note: Refer to the Architectural Guidelines regarding architectural quality / landscape / verandahs / material and landscape design

*Codes in blue indicate where there is a difference in comparison to the KCDC Best Practice guide

	OBJECTIVE	DETAIL	GUIDELINE		REASON & COMMENT	EXCEPTION
			Minimum	Maximum		
LOT SIZE		Width (X) Length (Y) Total lot size	12m 28m 336m²	24m 32m 768,	<ul style="list-style-type: none"> To create a zone that allows medium intensive development as of right. To encourage generous, light filled stand-alone houses To allow single house development while maximising potential for subdivision 	(Refer to KCDC Best Practice Guide pg. 11-12 regarding site analysis and lot size)
OPEN SPACE		Living court area Must accommodate a circle with a minimum diameter Permeable surface	30m² 6m 30%		<ul style="list-style-type: none"> To ensure that there is adequate, useable private open space. A minimum of 30% of lot to be given over to permeable surface to allow for natural dispersal of run-off 	(Refer to KCDC Best Practice Guide pg. 16-17 regarding site analysis and lot size)
COVERAGE		House footprint (A) Dedicated Parking area Total coverage over site	80m² 30m² 40%	35% 50m²	<ul style="list-style-type: none"> To encourage two-three storey dwellings Ensures that all households have 2 private off-street car parks Maximise private open space 	<ul style="list-style-type: none"> Verandahs, entry features, bay windows and decks below 1m are excluded from site coverage calculations Refer to Garage Building Placement Standards Only covered parking spaces are included into the site's 'built coverage'
SETBACKS		House from street front House from rear lane Side yards Garage from lane Corner house from front Max. wall run before recess	2m 10m 2m 0m 0m -	6m - 50% 2m 2m 6m	<ul style="list-style-type: none"> To encourage a well-defined street frontage while providing flexibility for front yards To ensure adequate separation and daylight angles from adjacent lots Consolidates private open space at rear of house 	<ul style="list-style-type: none"> Verandahs, bay window and balconies and eaves/gutters may project up to the minimum set back line Bay windows cannot have a length, or combined length of greater than 3.6m Eaves are included if they extend beyond 900mm Refer to Corner Building Placement Standards
HEIGHT & RECESSION PLANES		Ground Floor Level: house Above flood plain: Garage Floor to floor levels Total Height to the apex: House Garage Recession Plane to all Sideyards	0.3m 0m 3.0m - - 5.7m, 45 degree	- 0m - - 8m 6m	<ul style="list-style-type: none"> To provide flood clearance following the site contours 0m garage FFL to ensure no habitable space on the ground floor addressing the lane To encourage traditional pitched roof forms A 10m height allows two full floors plus development of useable attic space 	<ul style="list-style-type: none"> Refer to Corner Building Placement Standards Refer to Garage Building Placement Standards Dormers and parapets can project through the recession plane (Refer to KCDC Best Practice Guide pg 22 regarding building heights)
RESILIENCE		Non-potable roof water Potable KCDC water supply Solar hot water panels: Insulation: Walls Roof Floors	1x 10,000L tank onsite Restricted to 1000L per day 1x2m² panel / 2 ppl R 3.5 R 4.6 R 3.5	- - - -	<ul style="list-style-type: none"> Roof collection water tanks located underground to supply toilets and outdoors / potable council supply in building To reduce load on electricity usage All external walls and floor to be insulated to a high standard to reduce energy and heating loads 	(Refer to KCDC Best Practice Guide pg 18 /24-25 regarding services and energy efficiency)

4.2 Semi-Detached House Codes

Located within the Village Precinct (Precinct 4) and the Multi-Unit Precinct (Precinct 5) where a number of allotments are developed at the same time, the use of a shared party wall on one side boundary means recession plane requirements apply no longer apply at this point, and consequently both linked

houses may reach the maximum height of 10m at the common boundary.

The Semi-detached House differs from the Detached Villas in that a side yard set back applies to one boundary only, maximising both side and rear spaces. The side yard requirements ensure good access to each house and prevent overshadowing, while ensuring that the streetscape pattern is maintained. The Semi-detached House is envisaged as a two / three storey typology.

To ensure the formation of private courtyards and gardens a garden wall of up to 1.8m will be placed along any unbuilt common allotment line. The garden wall may be set back from the allotment line in order to present a consistent plane to the adjacent allotment, or if on the boundary, to be centred along the boundary line. This also applies to common building party walls.

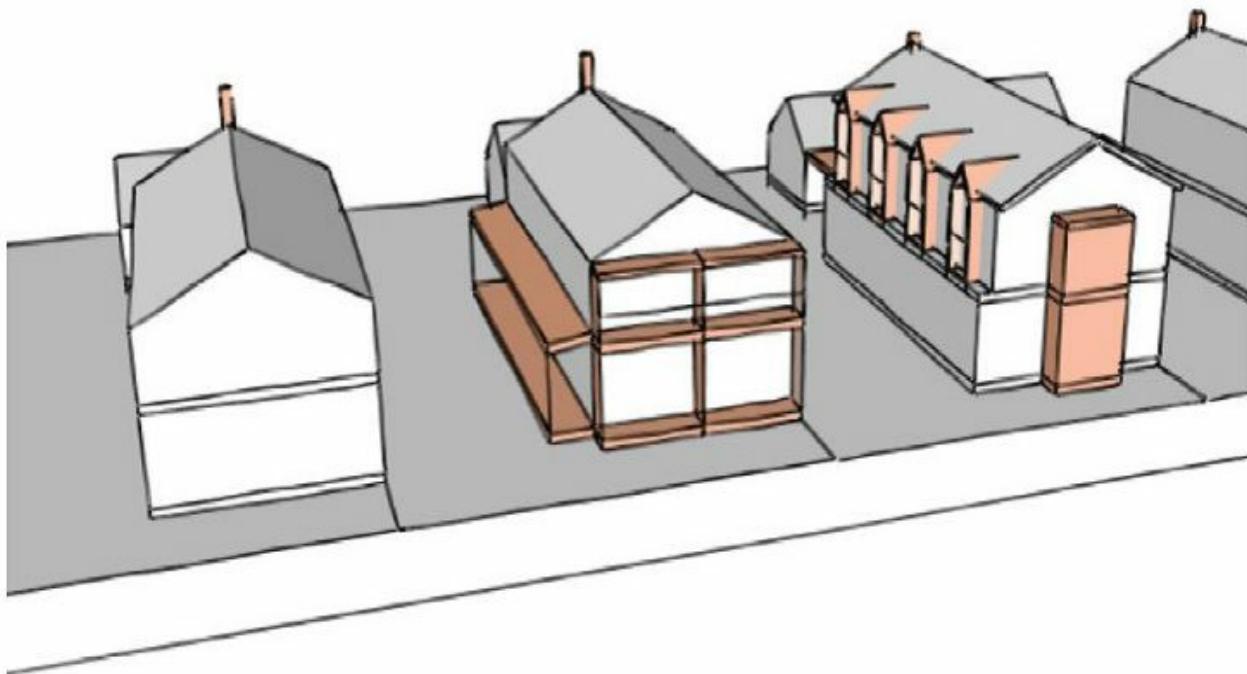


Figure 32: Typical Allotment Layout of a Semi-Detached House (indicative only — Layout and size may change)

Note: Refer to the Architectural Guidelines regarding architectural quality / landscape / verandahs / material and landscape design

*Codes in blue indicate where there is a difference in comparison to the KCDC Best Practice guide

OBJECTIVE	DETAIL	GUIDELINE Minimum Maximum	REASON & COMMENT	EXCEPTION	
LOT SIZE		Width (X) Length (Y) Total lot size	10m 25m 260m²	15m - 450m²	<ul style="list-style-type: none"> To create a building response that provides an intermediate level of density. Provides a transition typology from lower to higher density areas. To encourage a building response that ensures light access to one side. <p>(Refer to KCDC Best Practice Guide pg. 11-12 regarding site analysis and lot size)</p>
OPEN SPACE		Living court area Must accommodate a circle with a minimum diameter Permeable surface	30m² 6m 30%		<ul style="list-style-type: none"> To ensure that there is adequate, useable private open space. A minimum of 30% of lot to be given over to permeable surface to allow for natural dispersal of run-off <p>(Refer to KCDC Best Practice Guide pg. 13-15 regarding site analysis and lot size)</p>
COVERAGE		House footprint (A) Dedicated Parking area Total coverage over site	80m² 30m² 40%	120m²	<ul style="list-style-type: none"> To encourage two-three storey dwellings Ensures that all households have 2 private off-street car parks Maximise private open space <p>(Refer to Garage Building Placement Standards Only covered parking spaces are included into the site's 'built coverage'</p>
SETBACKS		House from street front House from rear lane Side yards Garage from lane Corner house from front Max. wall run before recess.	2m 10m 2m 0m 0m -	4m - 50% 2m 2m 6m	<ul style="list-style-type: none"> To encourage a well-defined street frontage while providing flexibility for front yards To ensure adequate separation and daylight angles from adjacent lots Consolidates private open space at rear and/or side yards of house <p>Verandahs, bay window and balconies and eaves/gutters may project up to the minimum set back line Bay windows cannot have a length, or combined length of greater than 3.6m Eaves are included if they extend beyond 900mm Refer to Corner Building Placement Standards</p>
HEIGHT & RECESSION PLANES		Ground Floor Level: house Above flood plane: Garage Floor to floor levels Total Height to the apex: House Garage Recession Plane to all Side yards	0.3m 0m 3.0m - - 5.7m, 45 %	- - - 8-10m 6m	<ul style="list-style-type: none"> To provide flood clearance following the site contours To ensure no habitable space on the ground floor addressing the lane To encourage traditional pitched roof forms A 10m height within 12m of a street corner allows two full floors plus the development of useable attic space <p>(Refer to KCDC Best Practice Guide pg 22 regarding building heights)</p>
RESILIENCE		Non-potable roof water Potable KCDC water supply Solar hot water panels: Insulation: Walls Roof Floors	1x 10,000L tank onsite. Restricted to 1000L per day 1x2m² panel / 2 ppl R 3.5 R 4.6 R 3.5	- - - - -	<ul style="list-style-type: none"> Roof collection water tanks located underground to supply toilets and outdoors / potable council supply in building To reduce load on electricity usage All external walls and floor to be insulated to a high standard to reduce energy and heating loads <p>(Refer to KCDC Best Practice Guide pg 18 /24-25 regarding services and energy efficiency)</p>

4.3 Side Yard House Codes

The Side Yard House is a more intensive form than the Semi-Detached House in that while a side yard set back applies to one boundary only, there is an expectation that neighbouring properties will build to the boundary without regard for recession plances. Recession plane requirements do not apply to the party wall and consequently party walls may reach the maximum height at common boundaries.

The Side Yard House is envisaged as a two / three storey typology where the side yard requirements are provided to ensure good solar access to each house. this is a design feature that can be used between other more intensive typologies, such as row houses, to provide a break or variation.

Private courtyard and garden walls can be placed along any unbuilt common allotment line, or may be set back from the allotment line in order to present a consistent plane to the streetscape.

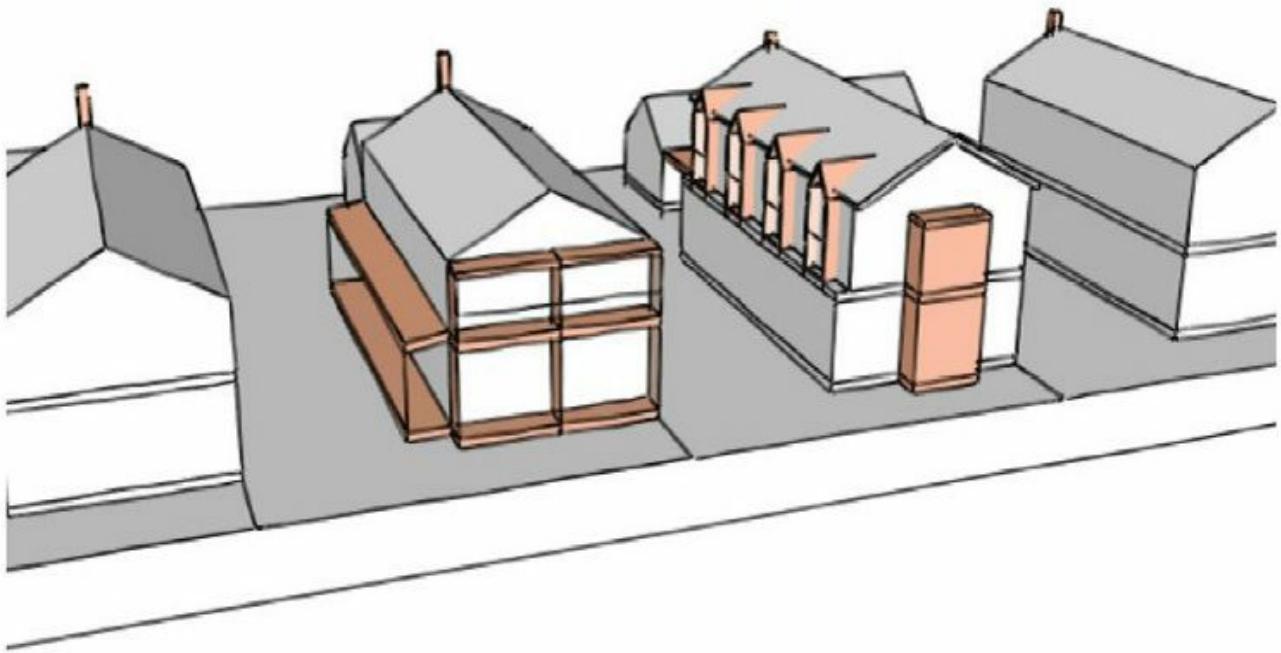


Figure 33: Typical Allotment Layout of a Side Yard House (indicative only — Layout and size may change)

Note: Refer to the Architectural Guidelines regarding architectural quality / landscape / verandahs / material and landscape design

*Codes in blue indicate where there is a difference in comparison to the KCDC Best Practice guide

OBJECTIVE	DETAIL	GUIDELINE Minimum Maximum	REASON & COMMENT	EXCEPTION	
LOT SIZE		Width (X) Length (Y) Total lot size	10m 28m 280m²	15m - 450m²	<ul style="list-style-type: none"> To create a zone that allows medium intensive development as of right. To encourage generous, light filled stand-alone houses. To allow single house development while maintaining potential for further development. <p>(Refer to KCDC Best Practice Guide pg. 11-12 regarding site analysis and lot size)</p>
OPEN SPACE		Living court area Must accommodate a circle with a minimum diameter Permeable surface	30m² 6m 30%		<ul style="list-style-type: none"> To ensure that there is adequate, useable private open space. A minimum of 30% of lot to be given over to permeable surface to allow for natural dispersal of run-off. <p>(Refer to KCDC Best Practice Guide pg. 13-15 regarding site analysis and lot size)</p>
COVERAGE		House footprint (A) Dedicated Parking area Total coverage over site	80m² 30m² -	120m² 50m² 40%	<ul style="list-style-type: none"> To encourage two-three storey dwellings Ensures that all households have 2 private off-street car parks Maximise private open space <p>(Refer to Garage Building Placement Standards Only covered parking spaces are included into the site's built coverage)</p>
BETRACKS		House from street front House from rear lane Side Yard to One Boundary Opposite Side Boundary Garage from lane Corner house from front Max. wall run before recess	2m - 2m 0m 0m 0m -	4m - 50% - 2m 2m 6m	<ul style="list-style-type: none"> To encourage a well-defined street frontage while providing flexibility for front yards To ensure adequate separation from adjacent lots Consolidates private open space at rear and/or side yards of house <p>(Refer to Corner Building Placement Standards)</p>
HEIGHT & RECCESSION PLANES		Ground Floor Level: house Above flood plain: Garage Floor to floor levels Total Height to the apex: House Garage	0.3m 0m 3.0m -	- 0m - 8-10m 6m	<ul style="list-style-type: none"> To provide flood clearance following the site contours To ensure no habitable space on the ground floor addressing the lane To encourage traditional pitched roof forms A 10m height at street corners allows two full floors plus the development of useable attic space <p>(Refer to KCDC Best Practice Guide pg 22 regarding building heights)</p>
RESILIENCE		Non-potable roof water Potable KCDC water supply Solar hot water panels: Insulation: Walls Roof Floors	1x 10,000L tank onsite Restricted to 1000L per day 1x2m² panel / 2 ppl R 3.5 R 4.6 R 3.5		<ul style="list-style-type: none"> Roof collection water tanks located underground / potable council supply in building To reduce load on electricity usage All external walls and floor to be insulated to a high standard to reduce energy and heating loads <p>(Refer to KCDC Best Practice Guide pg 18 /24-25 regarding services and energy efficiency)</p>

4.4 Row House Codes

The Row House Sites are the narrowest in the Village Precinct (Precinct 4) and the Multi-Unit Precinct (Precinct 5), at 8m wide. These houses share a common wall with their neighbour(s), and may be partnered with another terrace house or semi-detached town house.

The Anglo-Pacific style of the Terrace House facades should have a simple and restrained presence that belies the character of the inside spaces. Studio, or guest accommodation, should be achieved with the addition of an extra level to the garages overlooking the lane to the rear. Care is expected in the design of the houses to provide good solar access to rooms and outside living spaces. This encourages the use of skylights, light wells, dormers and balconies.

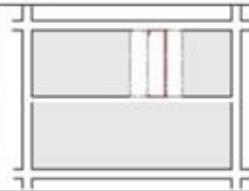
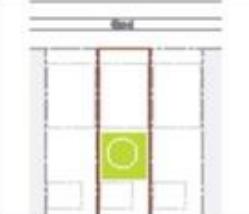
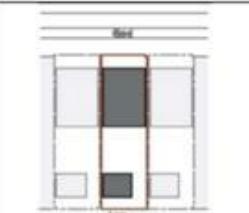
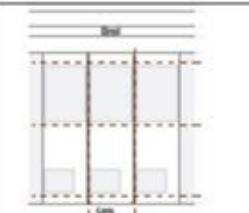
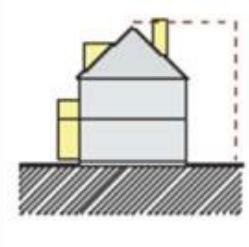
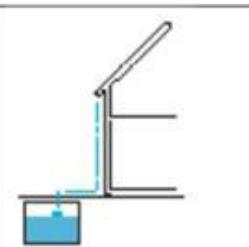
The typical Row House site is intended to have a two/three-storey building along the street frontage, a garage/carriage house at the common lane, and a private courtyard in the centre of the allotment. A thin side-wing may be built to further protect the privacy of the courtyard and provide shelter.



Figure 34: Typical Allotment Layout of a Row House (indicative only — Layout and size may change)

Note: Refer to the Architectural Guidelines regarding architectural quality / landscape / verandahs / material and landscape design

*Codes in blue indicate where there is a difference in comparison to the KCDC Best Practice guide

	OBJECTIVE	DETAIL	GUIDELINE Minimum Maximum	REASON & COMMENT	EXCEPTION
LOT SIZE		Width (X) Length (Y) Total lot size	8m 12m 28m - 224m² 400m²	<ul style="list-style-type: none"> To create a zone that allows medium intensive development as of right. To encourage generous, light filled attached and semi-detached houses. To allow side-by-side housing without impacting negatively on each other 	(Refer to KCDC Best Practice Guide pg. 11-12 regarding site analysis and lot size)
OPEN SPACE		Living court area Must accommodate a circle with a minimum diameter Permeable surface	30m² 6m 30%	<ul style="list-style-type: none"> To ensure that there is adequate, useable private open space. A minimum of 30% of lot to be given over to permeable surface to allow for natural dispersal of run-off 	<ul style="list-style-type: none"> Verandahs, bay windows and balconies may project past minimum set back by 1m. (Refer to KCDC Best Practice Guide pg. 13-15 regarding site analysis and lot size)
COVERAGE		House footprint (A) Dedicated Parking area Total coverage over site	50m² 100m² 30m² 50m² - 50%	<ul style="list-style-type: none"> To encourage two-three storey dwellings Ensures that all households have 2 private off-street car parks Maximise private open space 	<ul style="list-style-type: none"> Verandahs, entry features, bay windows and decks below 1m are excluded from site coverage calculations Refer to KCDC Best Practice Guide pg. 13-15 regarding site analysis and lot size Refer to Garage Building Placement Standards Only covered parking spaces are included into the site's 'built coverage'
SETBACKS		House from street front House from rear lane Side Yards Garage from lane Corner house from front Max. wall run before recess	2m 4m - - 0m - 0m 2m 0m 2m - 6m	<ul style="list-style-type: none"> To encourage a well-defined street frontage while providing flexibility for front yards No side yards provision encourages common party walls, that must have regard to recession planes Consolidates private open space at rear of house 	<ul style="list-style-type: none"> Verandahs, bay window and balconies and eaves/gutters may project up to the minimum set back line Bay windows cannot have a length, or combined length of greater than 3.6m Eaves are included if they extend beyond 900mm Refer to Corner Building Placement Standards
HEIGHT & RECESSION PLANES		Ground Floor Level: house Above flood plane: Garage Floor to floor levels Total Height to the apex: House Garage Recession Plane applicable to front and rear	0.3m - 0m 0m 3.0m - - - - 8-10m - 6m 5.7m, 45 %	<ul style="list-style-type: none"> To provide flood clearance following the site contours To ensure no habitable space on the ground floor addressing the lane To encourage traditional pitched roof forms A 10m height allows three full floors plus the development of useable attic space Ensure adequate sunlight to rear private courts 	<ul style="list-style-type: none"> Refer to Corner Building Placement Standards Refer to Garage Building Placement Standards Dormers and parapets can project through the recession plane up to the wall (Refer to KCDC Best Practice Guide pg 22 regarding building heights)
RESILIENCE		Non-potable roof water Potable KCDC water supply Solar hot water panels: Insulation: Walls Roof Floors	1x 10,000L tank onsite Restricted to 1000L per day 1x2m² panel / 2 ppl R 3.5 R 4.6 R 3.5	<ul style="list-style-type: none"> Roof collection water tanks located underground to supply toilets and outdoors. Potable council supply in building To reduce load on electricity usage All external walls and floor to be insulated to a high standard to reduce energy and heating loads 	(Refer to KCDC Best Practice Guide pg 18 /24-25 regarding services and energy efficiency)

4.5 Corner House Codes

The Corner House Site is one of the most critical architectural statements of a higher intensity urban

development in the Multi-Unit and Village Precincts (Precincts 4 & 5). For this reason restrictions on setbacks and height have been eased to allow allotment owners and designers to set a higher benchmark and facilitate possible mixed use in the future at critical corners.

The Corner House Building Standards offer flexibility in the configuration of floor plans and gardens, with rooms which can open into private enclosed gardens or directly onto streets or woonerfs.



Figure 35: Typical Allotment Layout of a Corner House (indicative only — Layout and size may change)

Note: Refer to the Architectural Guidelines regarding architectural quality / landscape / verandahs / material and landscape design

*Codes in blue indicate where there is a difference in comparison to the KCDC Best Practice guide

OBJECTIVE	DETAIL	GUIDELINE		REASON & COMMENT	EXCEPTION
		Minimum	Maximum		
LOT SIZE		Width (X) Length (Y) Total lot size	12m 28m 336m ²	20m - 600m ²	<ul style="list-style-type: none"> To create a zone that allows medium intensive development as of right. To encourage generous, light filled attached and semi-detached houses. To allow side-by-side housing without impacting negatively on each other <p>(Refer to KCDC Best Practice Guide pg. 11-12 regarding site analysis and lot size)</p>
OPEN SPACE		Living court area Must accommodate a circle with a minimum diameter Permeable surface	30m ² 6m 30%		<ul style="list-style-type: none"> To ensure that there is adequate, useable private open space. A minimum of 30% of lot to be given over to permeable surface to allow for natural dispersal of run-off <p>(Refer to KCDC Best Practice Guide pg. 13-15 regarding site analysis and lot size)</p>
COVERAGE		House footprint (A) Dedicated Parking area Total coverage over site	50m ² 30m ² -	100m ² 50m ² 50%	<ul style="list-style-type: none"> To encourage two-three storey dwellings Ensures that all households have 2 private off-street car parks Maximise private open space <p>(Refer to Garage Building Placement Standards)</p> <p>Only covered parking spaces are included into the site's 'built coverage'</p>
SETBACKS		House from street front House from rear lane Side Yards Façade to site ratio Garage from lane Max. wall run before recess	Dim 10m 2m 50% 0m -	4m - 50% -	<ul style="list-style-type: none"> To encourage a well-defined street frontage while providing flexibility for front yards No side yards provision encourages common party walls, that must have regard to recession planes Consolidates private open space at rear of house Verandahs, bay window and balconies may project up to the minimum set back line Bay windows cannot have a length, or combined length of greater than 3.6m Eaves are included if they extend beyond 900mm Side yard can be reduced to 0m when corner house is adjacent to row house and side yard house
HEIGHT & RECESSION PLANES		Ground Floor Level: house Above flood plain: Garage Floor to floor levels Total Height to the apex: House Garage Recession Plane to all Side yards	0.3m 0m - 8m - 5.7m, 45 %	- 0m 3.2 m 8-10m 6m	<ul style="list-style-type: none"> To provide flood clearance following the site contours To ensure no habitable space on the ground floor addressing the lane To encourage traditional pitched roof forms A 12m height a landmark building at corners Ensure adequate sunlight to rear private courts This allows for landmark tower within close proximity of a corner Refer to Garage Building Placement Standards Dormers and parapets can project through the recession plane up to the wall <p>(Refer to KCDC Best Practice Guide pg 22 regarding building heights)</p>
RESIDENCE		Non-potable roof water Potable KCDC water supply Solar hot water panels: Insulation: Walls Roof Floors	1x 10,000L tank onsite Restricted to 1000L per day 1x2m ² panel / 2 ppl R 3.5 R 4.6 R 3.5		<ul style="list-style-type: none"> Roof collection water tanks located underground to supply toilets and outdoors. Potable council supply in building To reduce load on electricity usage All external walls and floor to be insulated to a high standard to reduce energy and heating loads <p>(Refer to KCDC Best Practice Guide pg 18 /24-25 regarding services and energy efficiency)</p>

4.6 Country Estate House Codes

In contrast to the Village Precinct, Multi-Unit and mixed Use Precinct, where houses are built to the edge of their allotments in order to create private courtyards, the Country Estate House in the Perimeter Precinct (Precinct 2) sites offer the possibility of building larger ‘homestead’ style houses set within productive landscaped grounds. These grounds will be heavily treed and provide a garden suburb response in this location.

Access to these sites should be directly from the street, with setback rules ensuring that car parking is removed from footpath proximity, and that driveways become a useable surface beyond a hard stand for cars.

These sites are located along the southern boundary, bordering the existing residential development, and are typically over $\frac{1}{4}$ acre in size. Excluding the setback requirements, the Building Placement Standards for these houses are the least restrictive.

Country Estate Houses should be intended as large, one or two-storey free-standing houses, which should be linked together by similar architectural detailing and fencing codes.

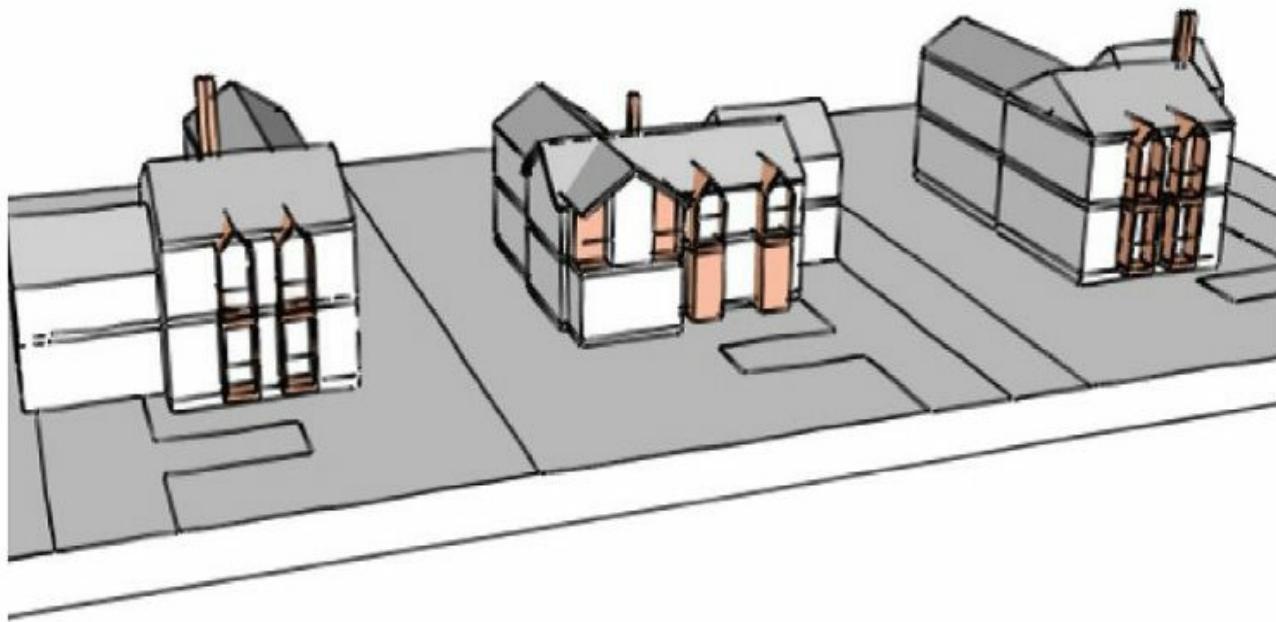
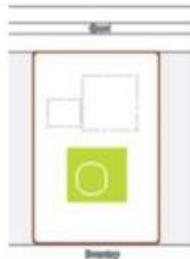
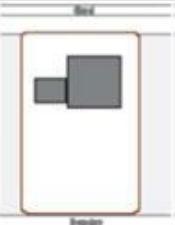
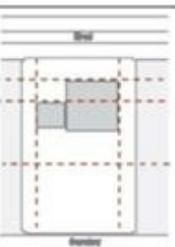
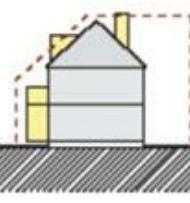
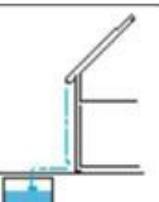


Figure 36: Typical Allotment Layout of a Country Estate House (indicative only — Layout and size may change)

Note: Refer to the Architectural Guidelines regarding architectural quality / landscape / verandahs / material and landscape design

*Codes in blue indicate where there is a difference in comparison to the KCDC Best Practice guide

	OBJECTIVE	DETAIL	GUIDELINE Minimum Maximum	REASON & COMMENT	EXCEPTION
LOT SIZE		Width (X)	25m	48m	<ul style="list-style-type: none"> To create a zone that allows generous houses on landscaped grounds. <p>(Refer to KCDC Best Practice Guide pg. 11-12 regarding site analysis and lot size)</p>
		Length (Y)	40m	"	
		Total lot size	1000m ²	3500m ²	<ul style="list-style-type: none"> To provide variation in street frontage and depth
					<ul style="list-style-type: none"> To allow single house development without further subdivision of sites.
OPEN SPACE		Living court area	50m ²		<ul style="list-style-type: none"> To ensure that there is adequate, useable private open space. <p>(Refer to KCDC Best Practice Guide pg. 13-15 regarding site analysis and lot size)</p>
		Length on one direction	8m		
		To have circle with radius of	6m		
		Permeable surface	50%		<ul style="list-style-type: none"> 50% of lot to be given over to permeable surface to ensure gardens and landscape dominate
COVERAGE		House footprint (A)	140m ²	250m ²	<ul style="list-style-type: none"> To encourage two storey dwellings <p>(Refer to KCDC Best Practice Guide pg. 13-15 regarding site analysis and lot size)</p>
		Dedicated Parking area	30m ²	50m ²	
		Total coverage over site	"	50%	<ul style="list-style-type: none"> Ensures that all households have 2 private off-street car parks Maximise private open space
					<ul style="list-style-type: none"> Only covered parking spaces are included into the site's 'built coverage'
SETBACKS		House from street front	6m	15m	<ul style="list-style-type: none"> To encourage a soft street frontage while providing for functional front yards.
		Garage from house front	1m	12m	
		Side Yard	4m	"	<ul style="list-style-type: none"> To ensure adequate separation between houses.
		House from rear boundary	15m	"	<ul style="list-style-type: none"> To ensure the open nature of the zone is maintained over time. Eaves are included if they extend beyond 900mm
		Max. wall run before recess	"	6m	
HEIGHT & RECEDSION PLANES		Ground Floor Level: house	0.3m	"	<ul style="list-style-type: none"> To provide flood clearance following the site contours To encourage traditional pitched roof forms
		Above flood plain: Garage	0m	0m	
		Floor to floor levels	3m	"	<ul style="list-style-type: none"> An 8.5m height allows 2 generous stories and pitched roof The height of the garage must not exceed the height of the house
		Total Height			
		House	"	8.5m	<ul style="list-style-type: none"> Ensure adequate sunlight to rear private courts <p>(Refer to KCDC Best Practice Guide pg 22 regarding building heights)</p>
		Garage	"	6m	
		Max. no. habitable floors	"	2	
RESILIENCE		Recession Plane to all Side yards	5.7m, 45 %		
		Non-potable roof water	1x 10,000L tank onsite		<ul style="list-style-type: none"> Roof collection water tanks located underground to supply toilets and outdoors. Potable council supply in building To reduce load on electricity usage
		Potable KCDC water supply	Restricted to 1000L per day		
		Solar hot water panels:	1x2m ² panel / 2 ppl		
		Insulation: Walls	R 3.5		<ul style="list-style-type: none"> All external walls and floor to be insulated to a high standard to reduce energy and heating loads
		Roof	R 4.6		
		Floors	R 3.5		

4.7 Garage Codes

These guidelines cover garages found in the following typologies: Detached villas, Sideyard House, Row House, Corner House and Country Estate Cottage. Garages for the Preserve, Apartments and Corner walk-ups are dealt with in each individual codes.

Vehicular access to Country Estate Cottages should be undertaken directly from the street, with setback rules ensuring that car parking is removed from footpath proximity, so that driveways should become an impermeable surface beyond a hard stand for cars.

Vehicular access to detached Villas, Row Houses and Corner Houses should be from rear lanes, with setback rules ensuring adequate turning areas and coverage rules to ensure that the lanes do not read as a solid garage façade.

The height restrictions should allow for an uninhabitable space on ground floor, but give opportunity for a useable attic space above all garages.

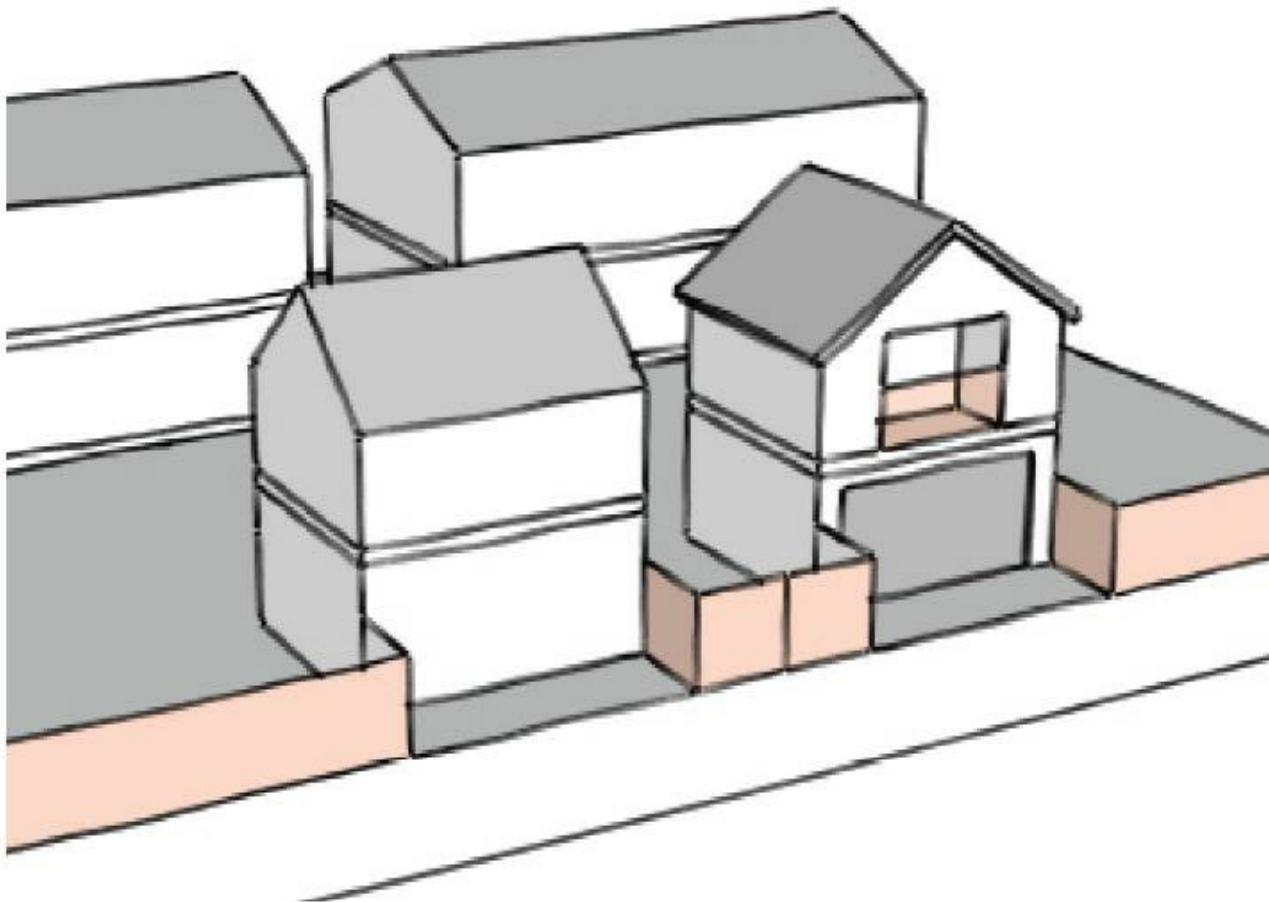
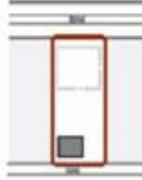
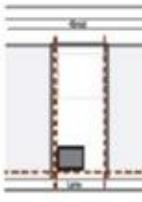
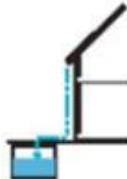


Figure 37: Typical Allotment Layout of a Garage (indicative only — Layout and size may change)

Note: Refer to the Architectural Guidelines regarding architectural quality / landscape / verandahs / material and landscape design

*Codes in blue indicate where there is a difference in comparison to the KCDC Best Practice guide

	OBJECTIVE	DETAIL	GUIDELINE		REASON & COMMENT	EXCEPTION
			Minimum	Maximum		
COVERAGE		Covered Parking Footprint Dedicated Parking area (covered/open)	18m 36m²	50m² 50m²	<ul style="list-style-type: none"> Ensures that all households have 2 private off-street car parks Only covered parking spaces are included into the site's 'built coverage' 	<ul style="list-style-type: none"> Verandahs, entry features, bay windows and decks below 1m are excluded from site coverage calculations Parking coverages not include (Refer to KCDC Best Practice Guide pg. 130 and 38 regarding garages and parking)
SETBACKS		Garage on corner site from road Garage from lane Garage Side Yard setbacks to have same setbacks as house typology Garages from house front in country estate cottage Max. wall run before recess	2m 0m varies 8m 6m	- 2m 12m 6m	<ul style="list-style-type: none"> To set garage back from street To restrict garaging available to smaller lots – to ensure the lane does not become a wall of garages To protect private open space at the rear of the house To make sure there is room to manoeuvre into the garage from a lane To ensure garage does not dominate front facade 	<ul style="list-style-type: none"> Verandahs, bay windows and balconies may project up to the minimum set back line Eaves are included if they extend beyond 900mm <p>(Refer to KCDC Best Practice Guide pg 13-15 regarding building heights)</p>
HEIGHT & RECESSION PLANES		Garage Floor level Total Height to the apex in all house typologies Recession Plane to the front	0m - 4.6m, 45 degrees	0m 6m	<ul style="list-style-type: none"> To ensure there is no habitable space on the ground floor addressing the lane To encourage traditional pitched roof forms A 6m height allows a full garage ground floor plus the development of useable attic space A garage may not exceed the height of the house In country estate cottages, garages may attach to the cottage, but should still read as a separate entity 	<ul style="list-style-type: none"> Dormers and parapets can project through the recession plane. These may have a max. overall width of 1.5m and the dormers' apex must be below the ridge line. A maximum of 2 dormers per elevation is allowed with a minimum separation of 1m between them. <p>(Refer to KCDC Best Practice Guide pg 22 regarding building heights)</p>
RESILIENCE		Non-potable roof water Potable KCDC water supply Solar hot water panels: Insulation: Walls Roof Floors	1x 10,000L tank onsite Restricted to 1000L per day 1x2m² panel / 2 ppl R 3.5 R 4.6 R 3.5		<ul style="list-style-type: none"> Roof collection water tanks located underground to supply toilets and outdoors. Potable council supply in building To reduce load on electricity usage All external walls and floor to be insulated to a high standard to reduce energy and heating loads 	(Refer to KCDC Best Practice Guide pg 18/24-25 regarding services and energy efficiency)

4.8 Walk-Up Codes

Located within the Multi-unit Precinct and Mixed Use Precinct, Walk-Ups provide a higher density opportunity whilst maintaining an overall design aesthetic in keeping with adjacent houses. They are a major component within perimeter blocks or town centre, and offer the opportunity of incorporating apartments or individual houses in more intensive and often mixed use environments.

These buildings are mainly for residential usage, but do not exclude compatible mixed use on ground floors. Parking is either behind the buildings or in one level basement parking areas, while the scale encourages two to three storey design.

The primary feature of this typology is that stairwell and access points directly address the pavement or public open spaces, and as a consequence, are strongly articulated. All residential units must have direct access to the vertical access point.

There should be a minimal setback to the street and the apartments line the pavement to ensure definition of the street. Balconies should be mandatory and provide weather protection and further

enhance the street.

Walk-up building facades should be designed to have non-repetitive building façade and to maximise visual amenity.



Figure 38: Typical Allotment Layout of a Walk-Up (indicative only — Layout and size may change)

Note: Refer to the Architectural Guidelines regarding architectural quality / landscape / verandahs / material and landscape design

*Codes in blue indicate where there is a difference in comparison to the KCDC Best Practice guide

	OBJECTIVE	DETAIL	GUIDELINE Minimum Maximum	REASON & COMMENT	EXCEPTION
PARCEL SIZE		Parcel Width (X)	28m	-	<ul style="list-style-type: none">To create a zone that allows high intensive development as of right.
		Parcel Depth	28m	-	
		Parcel Size	784m ²	2500m ²	<ul style="list-style-type: none">To provide a high quality alternative to a detached house or town house
		Internal distance between facing units	20m	-	<ul style="list-style-type: none">To allow side-by-side housing without impacting negatively on each other
OPEN SPACE		Permeable Surface	30%*	-	<ul style="list-style-type: none">To ensure that there is adequate, useable open space.
		External Living court area	Min 15m ² per unit		
		Area Length in one direction	6m		<ul style="list-style-type: none">A minimum of 30% of lot to be given over to permeable surface to allow for natural dispersal of run-off water.
					<ul style="list-style-type: none">Bay windows and balconies may project past minimum set back by 1m.Communal outdoor living space shall be provided as an integral part of the development.Ground floor units need to have a courtyard garden as a transition space to the street. (Refer to KCDC Best Practice Guide pg. 13-15 regarding site analysis and lot size)
COVERAGE		Building footprint (A)		40%	
		Building Depth	10m	15m	
		Studio	45m ²		
		One bedroom unit	55m ²		
		Two bedroom units	75m ²	50%	
		Three+ bedroom units	100m ²		
		Balcony area	12m ²		
SETBACKS		Unit face from street front excl. balcony or court	2m	4m	<ul style="list-style-type: none">To emphasise and provide a focal point at key corners.
		Apartment from rear lane	20m	-	<ul style="list-style-type: none">To encourage a well-defined street frontage while providing flexibility for front courts.
		Side Yard	0m	-	<ul style="list-style-type: none">All parking sub basements shall have a 0.5m landscape strip on street front to hide ventilation grilles and blank facades.
		Max. wall run before articulation		8m	<ul style="list-style-type: none">Refer to Corner Building Placement Standards.Reduced to 0m when adjacent to a Row House or Side Yard House
HEIGHT & ADJACENCY		Ground Floor Level: from ext FL:	0.5m	1.5m	<ul style="list-style-type: none">To provide flood clearance following the site contours
		Basement from flood plane	-	-1.5m	<ul style="list-style-type: none">To encourage traditional pitched roof forms
		Floor to floor levels	3m	-	<ul style="list-style-type: none">Greater height permitted on corners in Precinct 5
		Height from ext GFL:	8m	8-10m	
		Basement parking floor to floor	2.7m		
					<ul style="list-style-type: none">Dormers and parapets can project through the recession plane up to the wall (Refer to KCDC Best Practice Guide pg 22 regarding building heights)
RESILIENCE		Non-potable roof water	1x 10,000L tank onsite		<ul style="list-style-type: none">Roof collection water tanks located underground to supply toilets and outdoors. Potable council supply in building
		Potable KCDC water supply	Restricted to 1000L per day		<ul style="list-style-type: none">To reduce load on electricity usage
		Solar hot water panels:	1x2m ² panel / 2 ppl		<ul style="list-style-type: none">All external walls and floor to be insulated to a high standard to reduce energy and heating loads
		Insulation: Walls	R 3.5		
		Roof	R 4.6		
		Floors	R 3.5		
PARKING		On street/visitor parking	0.5 / unit		<ul style="list-style-type: none">Parking may be provided at grade or within semi-basement parking
		Residential parking	1.5 / unit		

4.9 Corner Walk-Up Codes

Corner Walk-Ups have been defined as a distinct typology because in the Precincts in which they are found, creating strong and legible corners is crucial to the development and legibility of that Precinct.

The Corner Walk-Up is different from the Normal Walk-Up typology because it normally exists as an independent parcel even within the perimeter block format, and requires particular attention in design. This typology allows the corner to have minimal setbacks regardless of the use. In most instances entrances should be designed with the corner element.

The Corner Walk-Up building must also be designed to have a non-repetitive building façade, to maximise visual amenity and ensure that apartments have direct access to a stairwell that accesses off the streetfront.

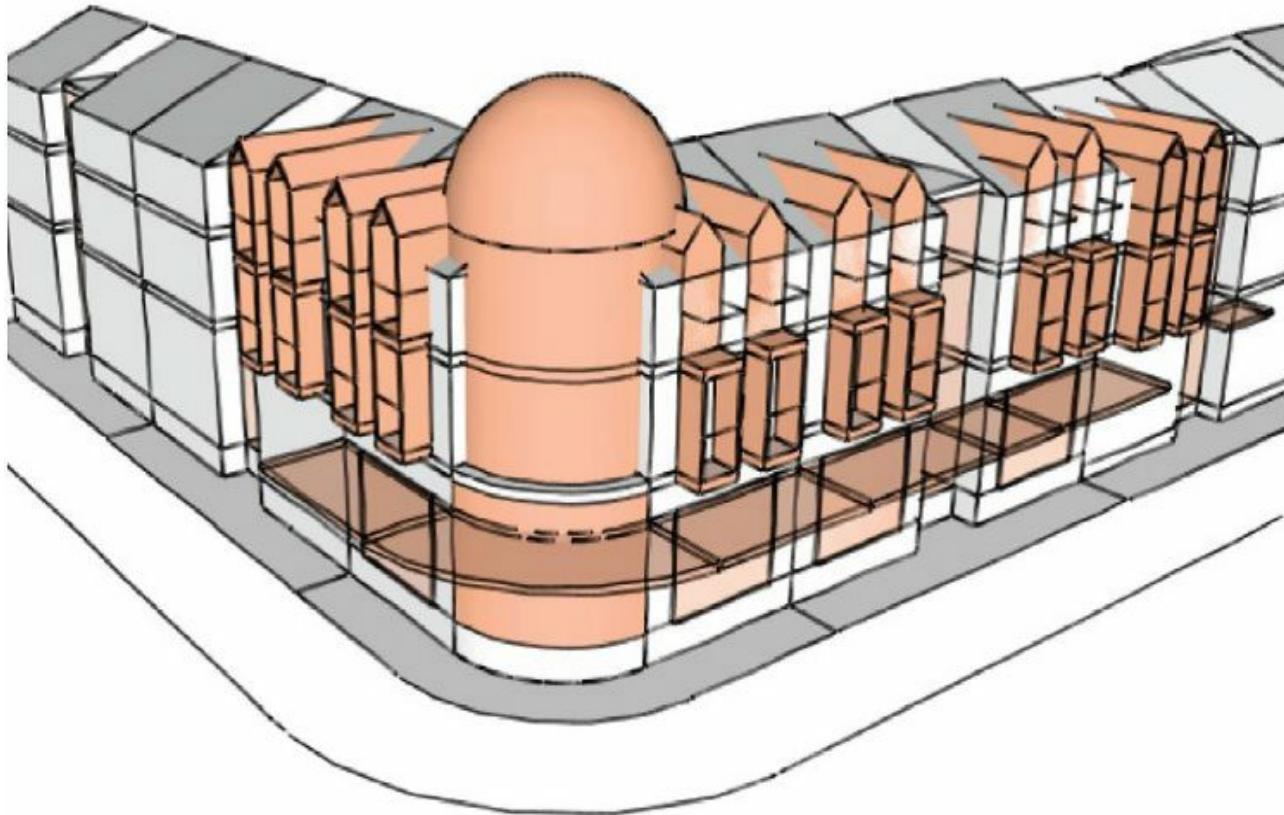


Figure 39: Typical Allotment Layout of a Corner Walk-Up (indicative only — Layout and size may change)

Note: Refer to the Architectural Guidelines regarding architectural quality / landscape / verandahs / material and landscape design

*Codes in blue indicate where there is a difference in comparison to the KCDC Best Practice guide

	OBJECTIVE	DETAIL	GUIDELINE Minimum Maximum	REASON & COMMENT	EXCEPTION
PARCEL SIZE		Parcel Width	28m	-	<ul style="list-style-type: none"> To create a zone that allows high intensive development as of right.
		Parcel Depth	28m	-	
		Parcel Size	784m ²	2500m ²	<ul style="list-style-type: none"> To provide a high quality alternative to a detached house or town house
		Internal distance between facing units	20m	-	<ul style="list-style-type: none"> To allow side-by-side housing without impacting negatively on each other
OPEN SPACE		Permeable Surface	30%	-	<ul style="list-style-type: none"> To ensure that there is adequate, useable open space.
		External Living court area	Min 15m ² per unit		
		Area Length in one direction	6m	-	
					<ul style="list-style-type: none"> A minimum of 30% of lot to be given over to permeable surface to allow for natural dispersal of run-off water.
COVERAGE		Building footprint	-	40%	<ul style="list-style-type: none"> To encourage two / three storey dwellings and maximise private open space. Ensure adequate natural light and ventilation into units is achieved. All habitable rooms require an external window. There is a preference for natural ventilation in all rooms To provide for small scale boutique apartments
		Building Depth	10m	15m	
		Studio	45m ²		
		One bedroom unit	55m ²		
		Two bedroom units	75m ²	50%	
		Three+ bedroom units	100m ²		
		Balcony area	12m ²		
SETBACKS/SETBACKS KSS		Corner Walk-Up from street front incl. landscape strip	0m	2m	<ul style="list-style-type: none"> To emphasise and provide a focal point at key corners To encourage a well-defined street frontage while providing flexibility for front courts. All parking sub basements shall have a 0.5m landscape strip on street front to hide ventilation grilles and blank facades
		Apartment from rear lane	N/A	-	
		Side Yard	0m	-	
		Max. wall run before articulation		8m	
					<ul style="list-style-type: none"> Bay windows cannot have a length, or combined length of greater than 3.6m Eaves are included if they extend beyond 900mm Refer to Corner Building Placement Standards Reduced to 0m when adjacent to a Row House or Side Yard House
HEIGHT & RECESSION PLANES		Ground Floor Level: from ext FL:	0.5m	1.5m	<ul style="list-style-type: none"> To provide flood clearance following the site contours To encourage traditional pitched roof forms When retail or commercial is provided on the ground floor, canopies must be provided – as per Mixed Use Business
		Basement from flood plane	-	-1.5m	
		Floor to floor levels	3m	-	
		Height from ext GFL:	8m	12m	
		Basement parking floor to floor	2.7m		
RESIDENCE		Non-potable roof water	1x 10,000L tank onsite		<ul style="list-style-type: none"> Roof collection water tanks located underground to supply toilets and outdoors. Potable council supply in building To reduce load on electricity usage All external walls and floor to be insulated to a high standard to reduce energy and heating loads
		Potable KCDC water supply	Restricted to 1000L per day		
		Solar hot water panels:	1x2m ² panel / 2 ppi		
		Insulation: Walls	R 3.5		
		Roof	R 4.6		
		Floors	R 3.5		
PARKING		On street/visitor parking	0.5 / unit	-	
		Residential parking	1.5 / unit		
				-	

4.10 Apartment Codes

Located within the Mixed Use Precinct and Multi-unit Precinct, these larger buildings enjoy both the atmosphere of a mixed use area with arcadian landscape and view around them.

The purpose of these codes is to provide a built form that provides primarily for medium to high density residential development, with possible business use of the ground floor. Residential uses should be allowed on the ground floor where applicable and designs should allow for a mixed use/live work potential for incremental development.

They should create a built form that adds to the local centre with possible retail frontages and commercial or residential above to encourage 24hour use and surveillance of all sides. Parking should be either behind the buildings, in one level basement parking areas or in parking buildings and the scale should encourage three-four storey design.

There should be minimum setbacks to the street and the apartments line the pavement to ensure definition of the street. Balconies/covered walkways should be mandatory on all public fronts to apartment buildings, to provide weather protection and further enhance the street. Entries should be accessed from the street.

Apartments should be designed to have non-repetitive building façade and to maximise visual amenity. They should also provide, where possible, additional communal facilities such as a gymnasium, swimming pool, clubhouse and sports facilities, using ground floor street-fronts where possible.

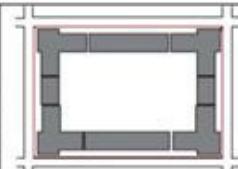
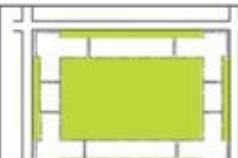
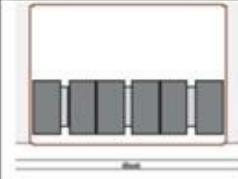
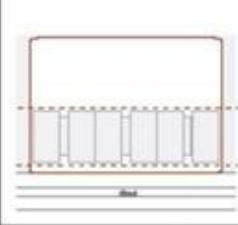
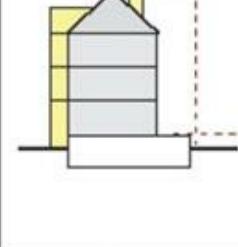
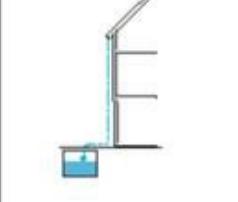
Note: where apartment buildings or part-thereof are designed as or converted into mixed use business use, those areas are to follow the Mixed Use Business Codes.



Figure 40: Typical Allotment Layout of an Apartment (indicative only — Layout and size may change)

Note: Refer to the Architectural Guidelines regarding architectural quality / landscape / verandahs / material and landscape design

*Codes in blue indicate where there is a difference in comparison to the KCDC Best Practice guide

	OBJECTIVE	DETAIL	GUIDELINE Minimum Maximum	REASON & COMMENT	EXCEPTION
PARCEL SIZE		Studio One bedroom unit Two bedroom units Three+ bedroom units Balcony Area Parcel Width Parcel Depth Parcel Area	45m ² 55m 75m ² 100 m ² 6m ² 40m ² 40m ² 1600m ²	- - - - - - - -	<ul style="list-style-type: none"> To create a zone that allows high intensive development as of right. <p>(Refer to KCDC Best Practice Guide pg. 11-12 regarding site analysis and lot size)</p> <ul style="list-style-type: none"> Unit Areas are exclusive of balcony areas Balcony areas should increase in area with larger units
OPEN SPACE		External Living court area: 5-50 units 51+ units Permeable Surface	15m ² / unit 12m ² / unit Min of 25%	- - -	<ul style="list-style-type: none"> To encourage perimeter buildings and courtyard typologies To allow for natural dispersal of run-off water. <p>(Refer to KCDC Best Practice Guide pg. 13-15 regarding site analysis and lot size)</p>
COVERAGE		Building footprint Building Depth Balcony depth	- 10m 14m 1.8m ²	40% - -	<ul style="list-style-type: none"> To encourage three storey dwellings <p>(Refer to coverage drawing in 'corner walkup' for reference)</p> <ul style="list-style-type: none"> Excludes external open space created by basement parking <p>(Refer to KCDC Best Practice Guide pg. 13-15 regarding site analysis and lot size)</p>
SETBACKS/SETBACKS		Apartment from street Apartment from rear lane Corner unit from street Max. wall run before recess Side yard setback Minimum distance between units	0m 0m 0m - 0m 20m	2m - 1m 8m 2m -	<ul style="list-style-type: none"> To encourage a well-defined street frontage while providing flexibility for front yards To articulate corner as distinct elements and offer a mixed use opportunity Allow continuous built facades To protect private open space and allow light into units <p>(Refer to KCDC Best Practice Guide pg. 13-15 regarding site analysis and lot size)</p> <ul style="list-style-type: none"> Verandahs and bay windows may project past minimum set back by 1m onto private open space only Eaves are included if they extend beyond 900mm
HEIGHT & RECEDITION PLANES		Ground Floor Level: from ext FL: Basement FFL from flood plane Ground Floor to floor levels Upper Floor to floor levels Total Height from ext GFL: Basement parking floor to floor Corner feature Mandatory canopies when over footpaths	0.5m - 3.5m 3.0m 8m 2.7m 8m 3m from ground	1.5m -1.5m 4.5m 3.3m 10m 3.2m 10m -	<ul style="list-style-type: none"> To provide flood clearance following the site contours 10m height only at corners in Precinct 5 and if residential only in Precinct 6 <p>(Refer to KCDC Best Practice Guide pg 22 regarding building heights)</p> <ul style="list-style-type: none"> On corner sites a tower with a maximum footprint of 4 x 4m can exceed 14m height by 2m
RESILIENCE		Non-potable roof water Potable KCDC water supply Solar hot water panels: Insulation: Walls Roof Floors	1x 10,000L tank onsite Restricted to 1000L per day 1x2m ² panel / 2 ppl R 3.5 R 4.6 R 3.5		<ul style="list-style-type: none"> Roof collection water tanks located underground to supply toilets and outdoors. Potable council supply in building To reduce load on electricity usage All external walls and floor to be insulated to a high standard to reduce energy and heating loads <p>(Refer to KCDC Best Practice Guide pg 18 /24-25 regarding services and energy efficiency)</p>
PARKING		Residential parking Elderly parking Visitor parking	1.5 / unit 0.5 / unit 0.5 / unit	- - -	<ul style="list-style-type: none"> Residential/visitor parking spaces occur in 1 level basement or as on-street parking areas, accessed where possible from side streets or lanes

4.11 Mixed Use Business Codes

This typology covers a variety of built mixed use business types and uses, found in different areas within the development.

The Majority of the Mixed Use Business Typology are found within the Mixed Use Precinct and are designed to create a built form that adds to the local centre with retail or commercial frontages on ground floor and commercial/business above. Where provided, parking should be either behind the buildings or in one level basement parking areas, and the scale should encourage three-four storey design.

There should be minimum setbacks to the street; and the shops and active uses line the pavement to ensure definition of the street as well as transparent and active frontages. Balconies/covered walkways should be mandatory on all public fronts, to provide weather protection and further enhance the street.

Note: Mixed Use business typologies within the Mixed Use precinct follow the Codes as set out in full within the Mixed Use precinct follow the Codes as set out in full within this section. Where mixed use business buildings or part-thereof are designed as or converted into residential use, those areas are to follow the Use Apartment Codes.

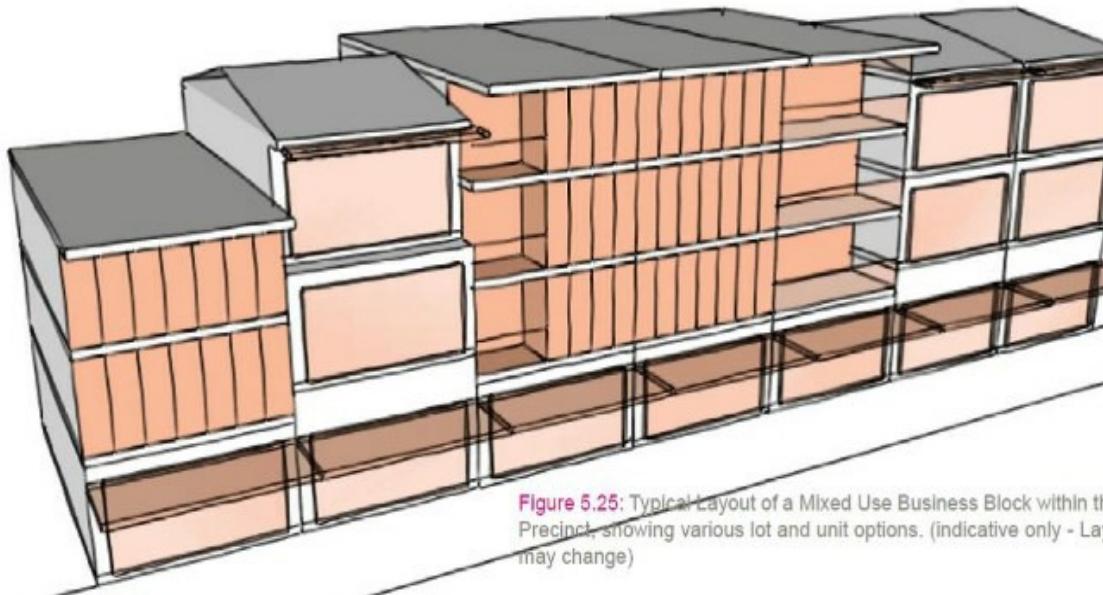


Figure 5.25: Typical Layout of a Mixed Use Business Block within the Mixed Use Precinct, showing various lot and unit options. (indicative only - Layout and size may change)

Figure 41: Typical Allotment Layout of a Mixed Use Business Block within the Mixed Use Precinct, showing various allotment and unit options (indicative only — Layout and size may change)

Expressive Solitary Buildings

Where buildings front onto a public space and are identified as a feature building, then flexibility is given within the Codes. These expressive solitary buildings could be one, two or three storeys high and designed as an architectural statement. These include the Waka House, Market Building, Aquatic Centre and Kiosk on the Public Piazza in the Mixed Use Precinct. Depending on the quality and excellence of architecture proposed, these buildings could qualify as public art, where a work of art/sculpture could be incorporated, creating interest and reinforcing the uniqueness of the area.

Note: Expressive Solitary Buildings follow the Unit, Resilience and Parking Codes as set out within this section. Allotment, Height, Open Space, Coverage and Setback allowances would be subject to Design Review Board Approval, bearing in mind the Precinct and Building Placement Codes for the area in

which they are found.

Note: Refer to the Architectural Guidelines regarding architectural quality / landscape / verandahs / material and landscape design

*Codes in blue indicate where there is a difference in comparison to the KCDC Best Practice guide

	OBJECTIVE	DETAIL	GUIDELINE		REASON & COMMENT	EXCEPTION
			Minimum	Maximum		
LOT COVERAGE		Business Unit Area	20m ²	1200m ²	<ul style="list-style-type: none"> To create a variety in ownable or rentable business units and lots, while maintaining 50% max built footprint. Permeable Surface to allow for natural dispersal of run-off water and to encourage use of permeable surfaces suited in parking courts. 	<ul style="list-style-type: none"> No more than 20% of the units within a development shall be less than 55m². <p>(Refer to KCDC Best Practice Guide pg. 11-12 regarding site analysis and lot size)</p> <ul style="list-style-type: none"> Unit Areas are exclusive of balcony areas Balcony areas should increase in area with larger units
		Business Unit street frontage	4m	12m		
		Lot width	40m	50% of block		
		Lot depth	40m	70m		
		Lot Area	40m ²	-		
		Building footprint	-	50%		
		Permeable surface	25%	-		
FAÇADES		External wall run before articulation in all buildings sides	-	6 m	<ul style="list-style-type: none"> To encourage three storey dwellings To ensure each business unit has sufficient external area for parking and direct service access to the rear of the building. To ensure facades orientate towards the public street edge. 	<ul style="list-style-type: none"> Excl. external open space created on top of basements
		Ext. glazing at street frontage on GFL	75%	-		
		Ext. glazing per wall run	50%	-		
SETBACKS		Building from street	0m	2m	<ul style="list-style-type: none"> To encourage a well-defined street frontage while providing recesses within the building façade. 	<ul style="list-style-type: none"> Verandahs and bay windows may project past minimum set back by 1m onto private open space only
		Building from rear lane	N/A	-		
		Corner unit from street	0m	1m	<ul style="list-style-type: none"> To articulate corner as distinct element. 	<ul style="list-style-type: none"> Eaves are included if they extend beyond 900mm
		Side yard setback	0m	2m	<ul style="list-style-type: none"> To allow continuous built facades while allowing covered access to onsite parking behind buildings. 	
HEIGHT & RECEDENCE PLANES		Int. GFL at street front	0m	0m	<ul style="list-style-type: none"> To provide a flush entrance to business units at street fronts. 	<ul style="list-style-type: none"> On corner features encourage a tower with a minimum footprint of max 3 x 3m which can exceed the 14m by 2m.
		Int GFL not at street front	0m	1.5m		
		Basement GFL from flood plane	-	-1.5m	<ul style="list-style-type: none"> 8m Total Height ensures min. a full 2 stores from ext GFL. 	<ul style="list-style-type: none"> Min. Building height from ext GFL to be maintained for 100% of footprint within 30m of street front. Thereafter Min. height may drop to 6.5m for single storey double volume buildings eg supermarkets.
		Ground Floor to floor	3.5m	4.5m		
		Upper Floor to floor	3.0m	3.5m		
		Total Height from ext GFL:	8m	12m		
		Basement floor to floor	2.7m	3.2m		
		Corner feature Total Height	8m	12m	<ul style="list-style-type: none"> To encourage towers on corners with pitched roofed loft-type spaces. 	
		Mandatory canopies when over footpaths	3m from ground	-	<ul style="list-style-type: none"> To encourage optimum public walkway area on ground floor 	
PARKING & RESILIENCE		Insulation: External Walls	R 3.5	-	<ul style="list-style-type: none"> All external walls and floor to be insulated to a high standard to reduce energy and heating loads. Energy reduction technologies to be applied to mixed use business buildings 	
		Roof	R 4.6	-		
		Floors	R 3.5	-		
		Disabled parking: <10 parks	1 disabled space		<ul style="list-style-type: none"> All Business Units are to have car parking spaces accessible from a max. 100m from the building, accessed if on site from side or rear lanes, not street fronts. 	
		11-100 parking spaces	2 disabled spaces		<ul style="list-style-type: none"> Parking may be allocated on site and/or on street. 	
		100+ parking spaces	1 disabled / 50 spaces			

4.12 Mai mai Building Response Codes

Design Philosophy

The Mai mai housing encompasses the areas of the Preserve that directly address either water or wetland. The main feature of the Mai mai areas is that allotment boundaries should extend 15m into the wetland. The allotment is divided into two components:

Land Zone: from the road boundary to the water's edge which includes Home Zone and part of the Openland.

Wetland Zone: starting from the high water flood plain level and extending a maximum 15m, this wetland enrichment planting area makes up the balance of the site, which includes Openland and part of the Home Zone.

Site Response

- The intent is to shroud development in a natural habitat while preserving an area suitable to ensure good solar aspect. The Mai mai residential typologies follow the subdivision rules for the Preserve Precinct i.e.:
- Min 50% Open Land (naturalised ground/water/wetland)
- Max 25% Built coverage (house/garage/sheds/covered decks)
- Min 25% Landscape Zone (paths/driveways/uncovered decks below 1m/lawns and gardens)

There are two broad site responses illustrated in section 4.2.1 A house should be built on any part of the site so long as the 50/50 rule is not broken, and that the maximum frontage within the Wetland Zone of 50% is not broken. The house form is encouraged to utilise the transition and Wetland Zone by 'hanging out' over the water either through building extension or decking. It is possible in some instances for the house to be placed almost entirely within the wetland.

Smaller allotment sizes encourage two-storey development with small footprints. These houses may operate in clusters, as a comprehensive development, sharing common access ways and even walls if required subject to the subdivision rules operating across the comprehensive parcel. The objective is to encourage buildings that integrate with the wetland edge as the public frontage, subordinating the lane to rear as the vehicle and pedestrian access point. All Codes for the Mai mai's cover garages as well, which could either be separated from the Mai mai or integrated into the building.



Figure 41: Indicative sketch of a Mai mai House (Layout and size may change)

Note: Refer to the Architectural Guidelines regarding architectural quality / landscape / verandahs / material and landscape design

4.12.1 General Design Goals

- To create a high quality wetland/parkland environment that absorbs ecologically sensitive dwellings which defer to the natural environment.
- To create a new (extended) water-edge and island landscape to provide waterfront housing with a high level of visual privacy but sufficient community to maintain the environment.
- To design buildings that are ‘set into’ the landscape — not placed on top of it.
- To design using non-polluting, low impact engineering and building technologies and techniques.
- To create an architecture and landscape that is celebratory and joyful.
- To enhance the sense-scape — natural sounds, smells, emotions.
- To include well expressed and identified public access to specific lakefront/wetland parks and ‘beaches’.

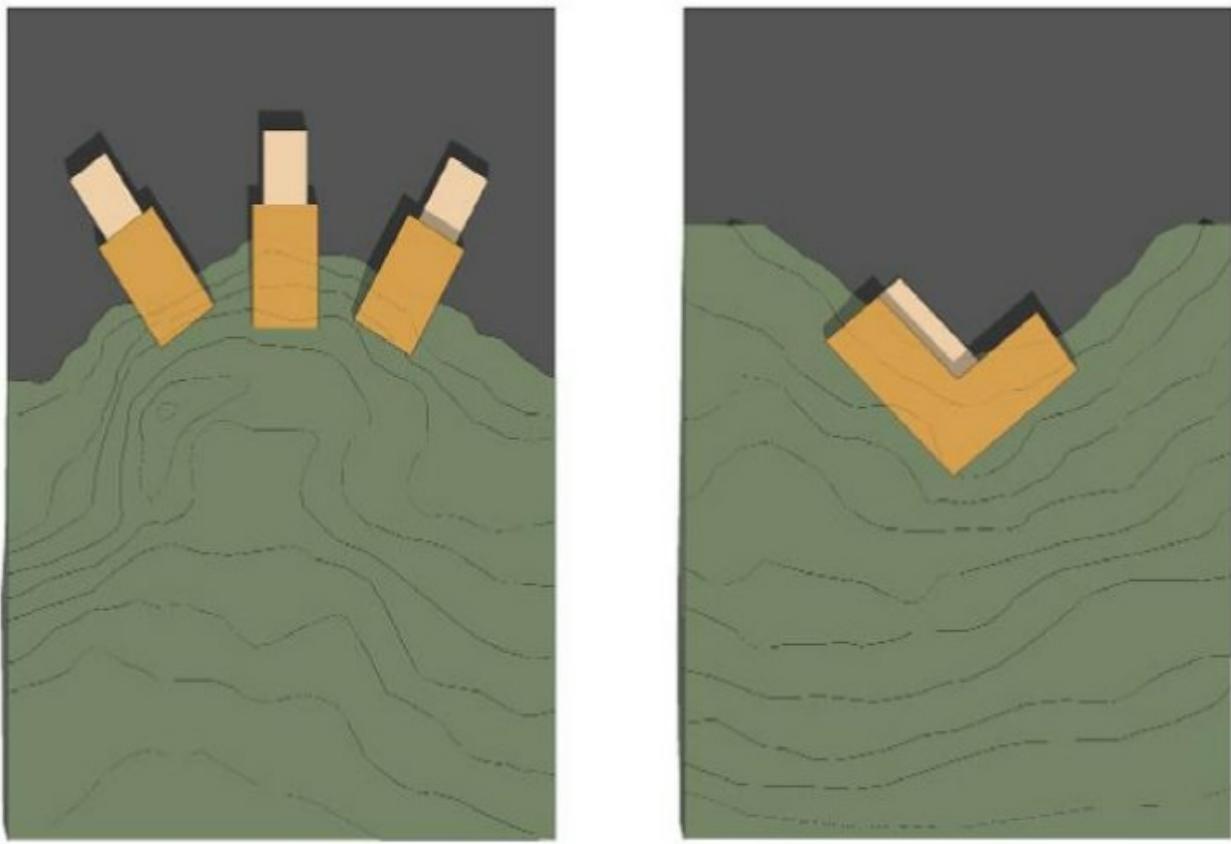
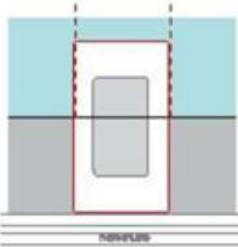
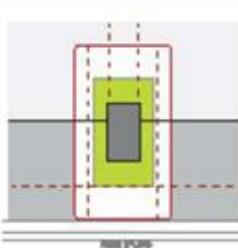
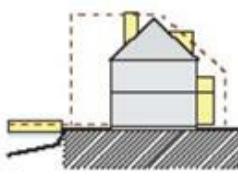
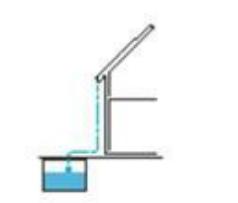


Figure 43: Typical building responses for a Maimai (indicative only — Layout and size may change)

	OBJECTIVE	DETAIL	GUIDELINE		REASON & COMMENT	EXCEPTION
			Minimum	Maximum		
LOT COVERAGE		Total Lot Size Lot Width at Shoreline Lot Depth beyond shoreline Building Footprints Landscape Zone Wetland/Open land	500m ² 8m - 25% 25% 50%	800m ² - 15m - - -	<ul style="list-style-type: none"> To create a zone that allows low intensity development as of right. To encourage generous, light filled stand-alone houses. To encourage small footprint, two storey dwellings with secondary accommodation. Building footprint includes garages, houses and sheds. To ensure that buildings have a wetland buffer on all edges. 	<ul style="list-style-type: none"> Well-designed and landform responsive integrated developments where appropriate. Built footprint includes houses, garages and permanently covered decks. Landscape zone includes permanently uncovered decks. Minimum lot size of 200m² can be achieved where a comprehensive approach over multiple lots undertaken, and the balance lot retained in private-common ownership.
BOUNDARY SETBACKS		Street Front Rear Boundary Side Boundaries Build frontage in Wetland Zone	5m 0m 2m 50%	- - - -	<ul style="list-style-type: none"> To provide a landscape buffer to the road and diminish the impact of built forms. To ensure adequate separation and daylight angles from adjacent lots. Minimises visual impact of off-site views at the water's edge. 	<ul style="list-style-type: none"> Well-designed and landform responsive integrated developments where appropriate.
HEIGHT & RECESSION		Floor Level Above Flood Plane Floor to Floor level Height Recession Plane to all Side Yards	0.3m 3m - 5.7m, 45 degrees	1m - 8m 2 levels -	<ul style="list-style-type: none"> To provide flood clearance following the site contours. To encourage traditional pitched roof forms. Height allows two full floors plus the development of useable attic space. 	<ul style="list-style-type: none"> Architectural features, chimneys and dormers can project through the recession plane up to the wall.
RESILIENCE		Non-potable roof water Potable KCDC water supply Solar hot water panels: Insulation: Walls Roof Floors	1x 10,000L tank onsite Restricted to 1000L per day 1x2m ² panel / 2 ppl R 3.5 R 4.6 R 3.5		<ul style="list-style-type: none"> Roof collection water tanks located underground to supply toilets and outdoors. Potable council supply in building. To reduce load on electricity usage. All external walls and floor to be insulated to a high standard to reduce energy and heating loads. 	(Refer to KCDC Best Practice Guide pg 18/24-25 regarding services and energy efficiency).

4.13 Dune House Codes

Design Philosophy

The Dune House sites away from the wetland edge and responds to the dune landform. These houses are intended to nestle into the dune and relate directly to their native surroundings through sensitive landscape and planting.

The Dune House is envisaged as a one-two storey typology that is accentuated in height at key points, but does not break the tree canopy or ridgelines. Building height has been set to encourage landowners, on sloping grades, to step into the land following contours, lowering the building's profile and making the architecture subservient to the dominant landscape.

Site Response

The Dune House typologies follow the subdivision rules for the Preserve Precinct i.e.:

- Min 50% Open Land (naturalised ground/water/wetland)
- Max 25% Built coverage (house/garage/sheds/covered decks)
- Min 25% Landscape Zone (paths/driveways/uncovered decks below 1m/lawns and gardens)

Buildings should be light in appearance avoiding heavy massing. They should blur distinction between indoor and outdoor, being more a composition of clustered building forms fitted into the landscape. Use of arcades, balconies, belvederes, conservatories etc. to soften mass.

Dune Houses can be built as separate title developments or in comprehensive developments as clusters. In this case, side boundaries may be reduced to allow for grouped dune houses, but only over a maximum of 2 boundaries, i.e., 3 allotments and as long as the subdivision and building placement rules apply to the comprehensive parcel. In some cases, this may help to reduce shared accessway area, while still maintaining privacy, views and coverage standards as set out in the Codes. All Codes for the Dune House cover garages as well, which could either be separated from the Dune House or integrated into the building.



Figure 43
and size i

Figure 44: Indicative sketch of a Dune House (Layout and size may change)

Note: Refer to the Architectural Guidelines regarding architectural quality / landscape / verandahs / material and landscape design

4.13.1 General Design Goals

Design Philosophy

- To create a high quality wetland/parkland environment that absorbs ecologically sensitive dwellings which defer to the natural environment.
- To create a new (extended) water-edge and island landscape to provide waterfront housing with a high level of visual privacy but sufficient community to maintain the environment.
- To design buildings that are ‘set into’ the landscape — not placed on top of it.
- To design using non-polluting, low impact engineering and building technologies and techniques.
- To create and architecture and landscape that is celebratory and joyful.
- To enhance the sense-scape — natural sounds, smells, emotions.
- To include well expressed and identified public access to specific lakefront/wetland parks and ‘beaches’.

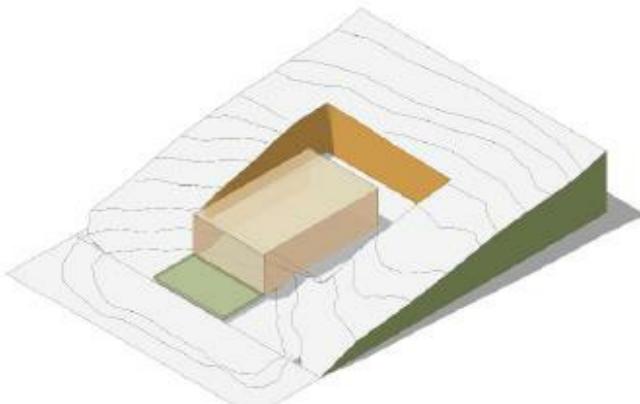
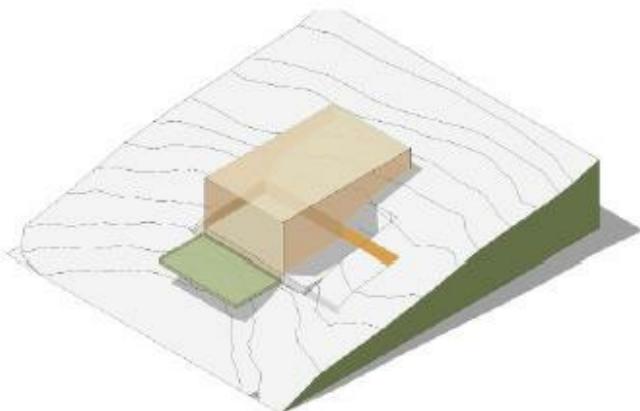
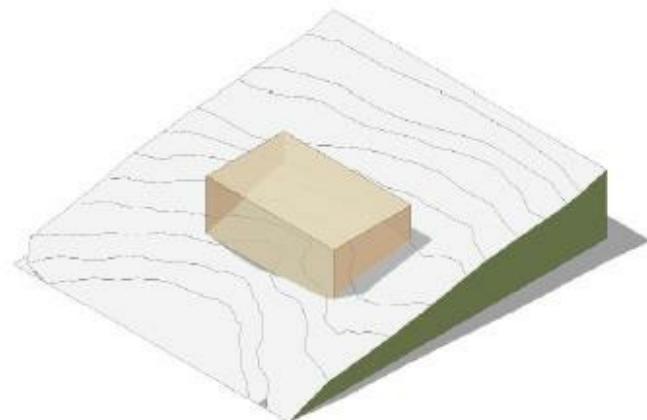


Figure 45: Typical building responses for a Dune House (Layout and size may change)

OBJECTIVE	DETAIL	GUIDELINE Minimum Maximum	REASON & COMMENT	EXCEPTION
COVERAGE		Total Lot Size 650m ² 2000m ² Lot Width at Road 12m Building Footprint - 25% Landscape Zone 25% - Open land/bush 50%	<ul style="list-style-type: none"> To create a zone that allows low intensity development as of right. To encourage generous, light filled stand-alone houses. To encourage larger footprint, dwellings with secondary accommodation. Minimises the distance a dwelling can be sited from the road. 	<ul style="list-style-type: none"> Well-designed and landform responsive integrated developments where appropriate. Built footprint includes houses, garages and permanently covered decks. Landscape zone includes permanently uncovered decks.
SETBACKS		Street Front 5m - Side Boundaries 3m - Rear Boundary 10m - Max. wall run before recess 6m	<ul style="list-style-type: none"> To provide a landscape buffer to the road and diminish the impact of built forms. To ensure adequate separation and daylight angles from adjacent lots. Minimises visual impact of off-site views. 	<ul style="list-style-type: none"> Well-designed and landform responsive integrated developments where appropriate.
HEIGHT & RECEDSION PLANES		Minimum Floor Level Above Flood Plane 0.3m 1m Floor to Floor levels 3m - Retaining on External Building Faces 1m - Height - 8m Recession Plane to all Side Yards 5.7m, 45 degrees	<ul style="list-style-type: none"> To provide flood clearance following the site contours. Height is measured from a point midway through the building platform at the boundary. Maximum height of any building is 8m above existing grade for 65% of the ground floor building footprint. A viewing tower or platform is allowable up to 10m and 4 x 4m dimensions. 	<ul style="list-style-type: none"> Architectural features can be 10m above existing grade to allow for roof penetrations, e.g.; chimney, light wells. Any part of the dwelling cannot exceed the ridge height to the canopy height, whichever is the highest.
RESILIENCE		Non-potable roof water 1x 10,000L tank onsite Potable KCDC water supply Restricted to 1000L per day Solar hot water panels: 1x2m ² panel / 2 ppl Insulation: Walls R 3.5 - Roof R 4.6 - Floors R 3.5 -	<ul style="list-style-type: none"> Roof collection water tanks located underground to supply toilets and outdoors. Potable council supply in building To reduce load on electricity usage All external walls and floor to be insulated to a high standard to reduce energy and heating loads 	(Refer to KCDC Best Practice Guide pg 18 /24-25 regarding services and energy efficiency)

4.14 Building Codes

4.14.1 Height and Mass

Codes applying to all precincts:

1. Use of arcades, balconies, belvederes, conservatories etc. is encouraged to soften mass.

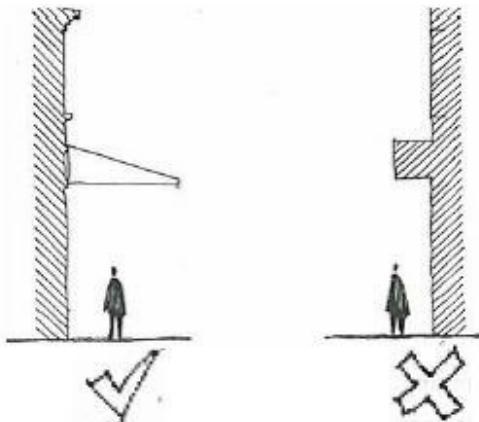


Figure 46: Use of appropriately scaled arcades and entrance covers which not only soften mass but are also practical and functional

2. Buildings to be light in appearance and should avoid heavy massing.
3. Long stretches of solid blank walls should be avoided at all times. If necessary, a solid wall shall not exceed a length of 6m at ground floor level and should not be adjacent to other areas of solid wall.
4. The following methods should be used to reduce the mass of buildings, in particular large developments: recesses, changes in material or height, use of planting, secondary elements such as balconies, entry porticos, vertical building elements and differing roof lines.
5. Repetition of building units in all buildings should be avoided en masse, and in apartments, the facades of individual units should be clearly defined.

Codes applying to the preserve:

6. Building height has been set to encourage landowners on sloping grades to cut down into the land, lowering the building profile and making the architecture subservient to any dominant landscape.
7. Buildings to be composed of clusters of building forms fitted into the landscape.
8. Design should blur distinction between indoor and outdoor areas.
9. On hillside and sloping sites, the appearance of the house from below will be carefully considered. Building forms should step to follow contours.

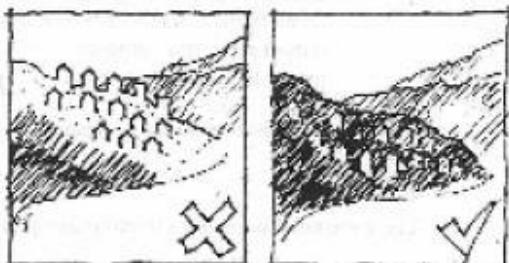


Figure 47: Integration of buildings in the Preserve into the surrounding landscape creating architecturally subservient forms

4.14.2 Orientation

1. In mixed use developments, different entries and uses should be legible and easy to find.
2. Entrances should provide good visitor shelter and be well lit at night.
3. Entrances should be located close to streets and should be visible from streets.

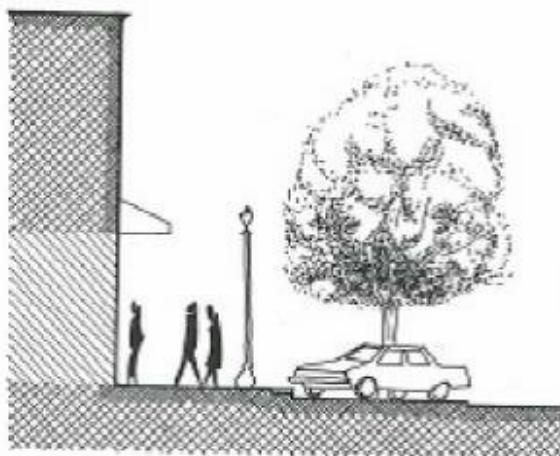


Figure 48: Entrances to mixed-use buildings which are visible and integrated with the streetscape

4. In apartments, an entrance should be designed to minimise the number of tenants using it (e.g. by providing private access to ground floor apartments).



Figure 49: Verandahs and porches to private dwellings providing a sense of entry while helping to give an appropriate scale to the street edge

5. Designs should take sun orientation and prevailing wind patterns into consideration, allowing sun penetration to internal living areas; and shielding outdoor areas including balconies, from wind.

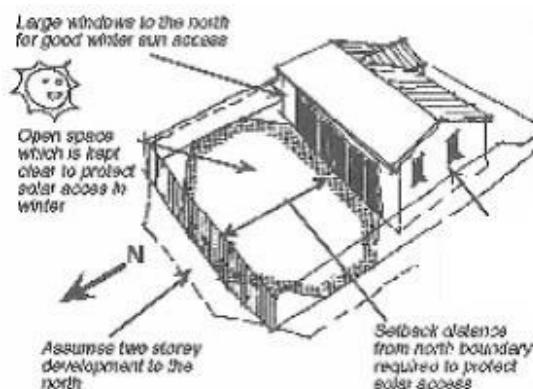


Figure 50: Building orientation should respond to the position of the sun and prevailing winds with larger openings facing north and larger yard space to the north.

6. Balconies should be designed in response to daylight, wind acoustic, privacy and visual needs; and should preferably include an overhead cover and side screening to at least one side. Where possible, they should be incorporated with a recessed area to maximise privacy.
7. The outdoor living space or balcony should be directly accessible from a living room (lounge/dining/family room). It should also provide a useable space and should maximise any views.

8. Mixed Use Buildings and individual residential units can be orientated differently according to different solar orientations of the sites. East-West running allotments should be wider to allow for sun access from side yards on the north; and north-south running allotments should be narrower to allow north sun in from the backyard. Houses facing these similar orientations follow similar principles.

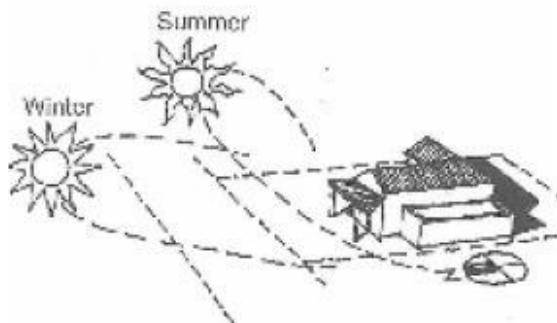


Figure 51: Buildings should allow winter sun to enter the building, while providing shady spaces in summer.

4.14.3 Roofs

1. In general the roof shape should be designed to flow with any major gradients in site slopes.
2. Gable, hip or shed type roofs are required for all large roof surfaces.
3. Flat roofs are discouraged except on small areas and where used in conjunction with other roof types.
4. Use of dormers, chimneys and other devices are encouraged to break up large expanses.

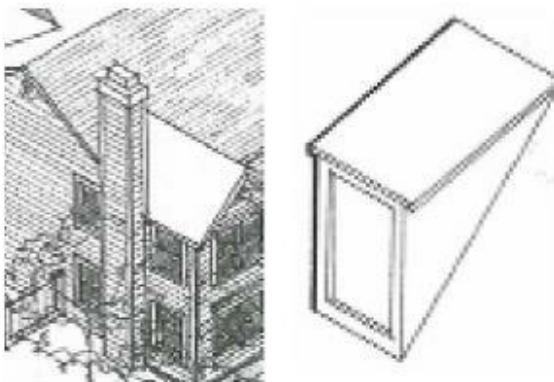


Figure 52: Chimneys and dormers can help to break up the mass of a roof.

5. In the Village, roof slopes are to be no shallower than 15 degrees and no steeper than 45 degrees.
6. Roof materials should be made from non-reflective, subdued earth colours.
7. Appropriate roofing materials include: slate, eurotray, oxidised tin, unglazed tiles, iron, timber shingles, copper or Onduline.
8. Flashing and downpipes are to be minimised and made in durable materials, which will weather appropriately, such as copper.
9. Overhangs are encouraged.
10. Roof top equipment (especially on apartment/mixed use buildings) such as large vents should be grouped and concealed to make them appear integral to the roof/wall designs.
11. Roof projections may not exceed 2m in height above the plane of the roof on any building.
12. Solar panels shall be set into roofs and be placed on north facing surfaces wherever possible.
13. Aerials shall be combined wherever possible.

4.14.4 Colours

1. A palette of muted earth tones is encouraged to complement the natural settings of the area.
2. Accent colours should only be used in limited areas, except in Solitary Expressive Mixed Use Business Buildings, which are intended to make an architectural statement.

4.14.5 Materials

1. Walls should be authentic and nearest to a natural state as possible.
2. No more than 3 primary materials should be used in one housing unit.
3. Materials should be related to the structural expression of the building.
4. Materials should be long lasting and durable, minimising poor quality weathering over time which may degrade the aesthetic of the development.
5. For wood – natural weathered colours should be used.

6. For metal – Earth tones and non reflective surfaces should be used.
7. Stone should be structural in appearance.
8. Where different materials adjoin, there should be a clear break in the plane of the surface.
9. Mixes of cladding materials, unrelated to structural expressions, are to be avoided.
10. Non monoclad plaster materials are to be used.
11. All building walls are to be built using cavity construction methods.

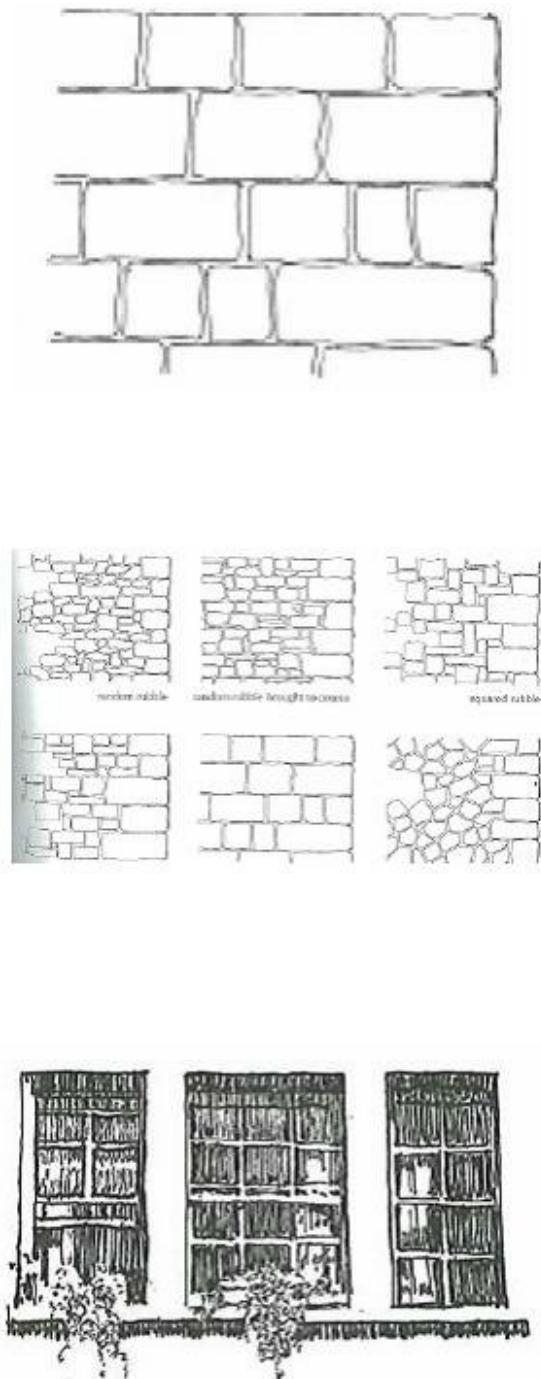


Figure 53: Materials should be authentic and nearest to their natural state as possible using good construction methods which help to illustrate their functional nature.

4.14.6 Windows and Doors

1. Window and door openings should be recessed to provide rain protection.
2. Large areas of glass are to be shaded by overhangs, balconies, and porches to minimise visibility from off site.
3. Glass may be non-reflective coated and tinted to control solar heat gain, but a mirrored appearance is not acceptable.
4. The shapes and details of all openings are to be appropriate to the structural expression of the walls within which they are located.
5. Ground floor retail and commercial spaces in the Mixed Use Precinct should allow for minimum 75% glazed frontage onto streets and public spaces.

4.14.7 Signage

1. Signage in the Village will be controlled through the Design Review Board procedure. In general, buildings should not be painted in corporate colours. Signage should be thought of and designed into the structure of the building, and signage must take up no more than a minimal percentage of the façade.

4.14.8 Energy Efficiency

1. Thermal and Acoustic Insulation
 - a. In residential buildings, positioning of rooms and exterior spaces should be designed to reduce noise transmission to each other (e.g. bedrooms should be placed side by side and exterior living spaces shield from each other etc).
 - b. Minimum insulation requirements for all buildings are: walls R3.5 / Ceilings R4.6 / Floors R3.5
2. Solar Gain
 - a. Buildings should be designed to utilise passive solar gain for example:
 - Limit south facing windows which lose heat
 - Utilise overhangs and screens which le winter sun in and keeps summer sun out.



Figure 54: Utilisation of eaves and porches to manipulate solar gain and loss

- b. Concrete floors on ground floors should be utilised where possible (in particular in larger buildings) to maximise temperature averaging.

3. Materials and Construction

- a. Materials used in construction should require minimum energy input over its life cycle where possible.
- b. Local materials should be used where feasible.
- c. Constructions should be planned sufficiently to minimise onsite construction waste and loss in energy during construction.
- d. New and/or non-renewable material resources should be minimised.

4. Energy production

- a. Incorporate renewable energy generation, such as solar, wind, small-scale or micro hydroelectric, and/or biomass (excluding wood log burners), with production capacity of at least 60% of the proposed buildings annual electrical and thermal energy cost, whereby at least 30% must be produced on-site.

5. Onsite Stormwater

The goal of water supply in North Waikanae is to provide a year long, plentiful, high quality supply and servicing system that minimises the impact on existing local systems. Water supply Codes

for buildings are covered in Building Placement Codes as well as Architectural Codes. This should be achievable through a combination of systems:

- a. Where appropriate, a limited potable Council supplied water system in combination with the utilisation of roof collected water for other uses will be the foundation of the water supply system.
- b. Roof water collection systems should be used for all residential buildings through the use of stormwater collection tanks. These are placed underneath the garage or buildings / grounds as required. This results in a 10,000 litre water tank per dwelling. This water may be used for non potable supply such as car washing, gardens and toilets/washing machines.
- c. In addition, a restriction will be placed on sites to limit the potable water supply to 1000 litres per day per dwelling, this can be achieved in a number of ways including being individually metered subject to KCDC approval. Typical domestic water usage is on average 350-550 litres per day, resulting in 1000 litres being sufficient for a long term confidence of supply.
- d. Outside water taps shall not be connected to the KCDC potable water supply.

6. Appliances and Fittings

- a. Energy efficient devices should be fitted in the initial construction of all buildings. These include (but are not limited to) the following: water efficient shower heads, dual flush toilets; and low energy lightbulbs.